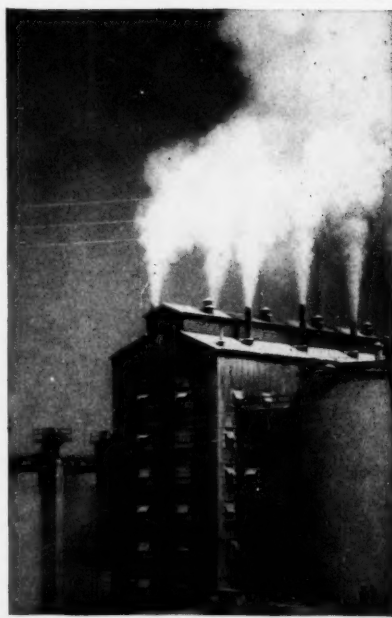


# Chemical Week

March 1, 1952

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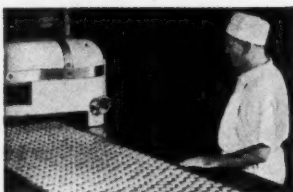
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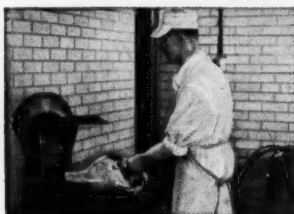
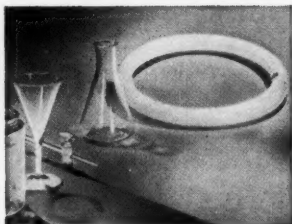
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# Chemical Week

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**AN AIR FORCE GENERAL:** "I wholeheartedly agree that there is a need to help the independent inventor because of the complexity of modern technology and the prohibitive cost of these facilities. Your farsighted plan is a great stride in relieving this situation."

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To date nearly 5,000 inventive people have submitted ideas to the laboratories; and the Sinclair Plan has become recognized as a service to inventors, the oil industry and the public. As a result we have made the Plan part and parcel of the long-range operation of our company.

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**HOW TO PARTICIPATE:** Instructions are contained in an Inventor's Booklet. Write to W. M. Flowers, Executive Vice-President, Sinclair Research Laboratories, Inc., 600 Fifth Avenue, New York 20, N. Y.

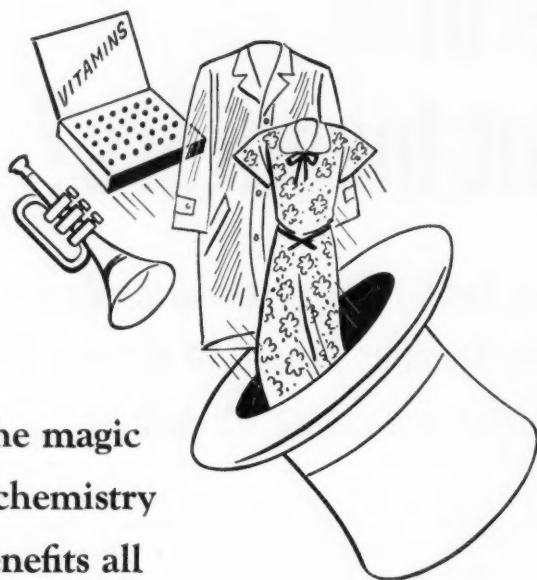
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## OPINION . . .

### Undermining Confidence?

TO THE EDITOR: . . . At the joint meeting of representatives from the chemical industry and food industry sponsored by the MCA (Additives Double-Header, Jan. 19) . . . there should have been an opportunity to properly review both sides of the question. It was my intention to present a prepared statement but a crowded program allowed time to sketch only a few pertinent points. It seems worthwhile, therefore, to submit . . . a copy of this brief statement.

There is considerable danger that the present situation will lead to a disaster which, in addition to the harmful effect on public health, will undermine public confidence in the food industry and particularly in the chemical industry. . . .

There is a gap in the . . . Federal Food Law which should be closed by amendment. For foods . . . as yet unstandardized, the present law places the burden on the FDA to prove a substance poisonous before its use in food can be prevented. A simple change in the law to place the burden of proof on the prospective user is essentially all that is needed. . . .

I wish to make it perfectly clear that I have taken no position either in support or in opposition to any particular bill. It is because I feel so strongly that the chemical industry may do immeasurable harm to the food industry as well as to itself by opposing such an amendment that I . . . bring this matter to your attention. . . .

ROY C. NEWTON  
Vice President  
Swift & Co.  
Chicago, Ill.

*Excerpts from Mr. Newton's statement:*

"It is not clear from the publications emanating from the chemical industry that many members of the chemical industry understand why a new material cannot be adapted to the food industry as quickly as it can to plastics, textiles, etc. . . . Running through this series of propaganda articles are many unsound premises. The repetition with which these same erroneous issues appear would indicate a planned objective of confusion. . . .

"There are many who would have us believe that the issue centers about . . . natural vs. synthetic. This question has nothing to do with the problem of chemicals in foods. . . . It makes no difference whether a poison

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## OPINION . . . . .

is natural or synthetic . . . it still should be kept out of food.

"The second erroneous issue is that of persecution. There is a vein of implication . . . that the manufacturing chemical industry is being persecuted. Insofar as I know this is false. . . .

"The third confusing bit of philosophy is that all foods are chemical in nature. Of course . . . but that does not lead to the conclusion that all chemicals are satisfactory as foods. . . .

"Number four—you cannot prove a negative. This has been used to belittle the requirements for an adequate animal testing program before new unusual products are allowed in food products.

"The fifth confuser is that even table salt is poisonous under some conditions. . . . One can cram enough salt down his throat to kill him . . . but used by the normal individual in the manner in which it has been used for thousands of years . . . it represents no hazard.

"Conversely . . . it is possible to incorporate in foods small amounts of chemicals which . . . without being obvious to the consumer would either kill him or impair his health when consumed over a long period of time. . . .

"I notice that the MCA has raised a sum of money for public relations activity . . . because of the emergency nature of the chemicals in food problem. . . . I believe there is a real threat to the food industry . . . that articles which appear in such sequence of repetition that they appear to be propaganda may affect public opinion . . . that the FDA will be prevented from carrying out its responsibility of protecting the public. . . ."

## Vanillin Accolade

TO THE EDITOR: . . . I wish to compliment you on the vanillin article (Feb. 2) which I believe is an excellent coverage of the subject. . . .

H. BORDEN MARSHALL  
Assistant Director  
Department of Chemistry  
Ontario Research Foundation  
Toronto, Canada

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

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MEKON <sup>®</sup> B-20	190-195	3-5	BROWN-BLACK AMBER. 6 MAX. YELLOW. 3-3½	0.0	0.0	MICRO-CRYSTALLINE HARD AND BRITTLE
A-20	190-195	3-5				
Y-20	190-195	3-5				
WARCO <sup>®</sup> WAX 180	180-185	4-7	WHITE	0.0	0.0	MICRO-CRYSTALLINE HARD AND BRITTLE
WARCO <sup>®</sup> WAX 150	145-150	20-25	BROWN YELLOW	0.0	0.0	MICRO-CRYSTALLINE PLASTIC
WARCOSINE <sup>®</sup>	145-150	15-20	WHITE	0.0	0.0	MICRO-CRYSTALLINE PLASTIC
PARAFFIN	131-133	FULLY REFINED				CRYSTALLINE
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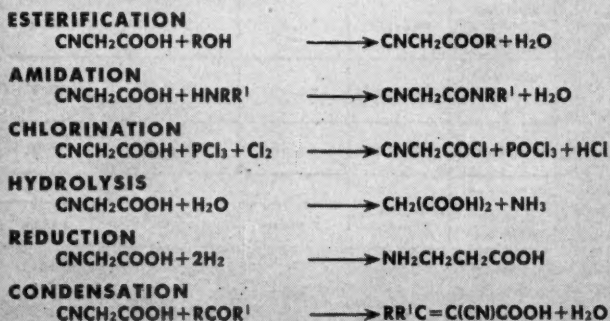


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## NEWSLETTER

Keep an eye on Cincinnati as a growing chemical center. Straws in the wind: Several new projects in the area, doubling of electric power generating capacity, increased dependence on water transportation.

Monsanto Chemical Co. will complete its plastics plant at Addyston (just west of the city limits on the Ohio River) in July, will barge styrene all the way from Texas City.

The biggest project is the Atomic Energy Commission plant now under construction northwest of the city, which National Lead Co. will operate; it will refine uranium ore (CW Newsletter, April 14, '51).

Cincinnati Gas & Electric Co. is upping its generating capacity from less than 600,000 to 1 million KW.

Ample water and rail transportation, and closeness to markets are lures, but there are some barbs too: Seven local firms, including Emery Industries and Procter & Gamble, recently entered into a joint venture to import process water; the local water table is falling.

Then, too, the anti-pollution campaign is starting to roll and the agency formed by the eight states along the Ohio River is starting to crack down on violators—desirable, even necessary, but expensive.

A spate of annual reports is pouring out of corporation offices this week. Results are mixed, but lower profits are predominant.

Du Pont's operating profit (excluding its General Motors dividends) was a record \$11.10 per common share before taxes—\$2.20 above 1950. But taxes and renegotiation reserves were \$3.28 higher, knocking the net down from \$4.09 to \$3.01.

Union Carbide's sales hit an all-time high—\$927 million against \$758 million the year before—but it's the same old story with profits. Taxes jumped from \$114 million to \$164 million, and net profit sagged from \$124 million to \$104 million.

Atlas Powder repeats the dirge. Sales were up over 20%—to almost \$52 million; taxes jumped from \$2½ million to \$3⅓ million; net profit fell from \$2½ million to slightly over \$2 million.

Hooker Electrochemical's sales soared from \$27 million to \$39 million. Gross profit was \$3½ million higher, but taxes more than doubled—from \$3.3 million to \$6.95 million, leaving a net of \$3,577,232 against last year's \$3,770,301.

But Merck bucked the trend. A hefty sales rise (\$120 million vs. \$94 million) offset doubled taxes (\$24.7 million vs. \$11.5 million) and allowed net to rise 11%—from \$11,277,000 to \$12,509,000.

Switching from profits to products, here are some new producers:

Semet-Solvay, an Allied Chemical division, will make polyethylene at Tonawanda, N. Y. Initial product will be a polyethylene wax suitable as a substitute for carnauba. No decision yet of when or how much.

Hancock Oil, which licensed an ethylene glycol process from Societe Carbochimique (CW Newsletter, Nov. 10, '51), will also make ethylene oxide and ethanolamines in its plant now under construction. Scientific Design (New York) is adapting the Belgian process, Parsons is building the unit.

The Oil Workers International Union (CIO) has chemical companies as well as petroleum refiners in the Southwest holding their breath this week. For they won't know until Monday, Mar. 3, whether OWIU will issue walk-out strike orders.

At issue are union demands for a 25¢ an hr. increase; shift differentials of 6¢ per hr. for the evening tour, 12¢ for the "graveyard" stretch. Reportedly some companies have agreed to the higher differentials; the decision is now up to the Wage Stabilization Board.

Chemical producers with OWI unions (there are strong locals at Shell Chemical, Rohm & Haas, Mathieson, etc.) aren't the only ones on the spot. Non-OWI-organized manufacturers depend on petroleum refineries either for raw materials or as consumers of their products. If refineries close down, they expect to do likewise.

An inventor's dream—continuous cheap fresh water from the sea—materialized last week. Ionics, Inc. (Cambridge, Mass.) showed a unit that will do just that. It's based on electrical power and the company's ion exchange membranes, Permionics.

Power cost of the continuous process, says Ionics, is  $\frac{1}{2}$ - $\frac{1}{3}$  that of the best process now available. Purifying brackish water—a more attractive proposition—is possible at 2¢ per thousand gallons (compared with 35¢ for intermittent ion exchange units, and 70¢ for Navy-type vapor compression evaporators). Rates are based on 3-mil per KWH power cost.

Principal drawback: The faster the flow of brine, the higher the power requirements. Also, membranes and equipment must be mass-produced to bring overall costs down to those cited for test unit.

Though details are still under wraps, the process for producing lithium chemicals at Foote Mineral's Exton, Pa. pilot plant is a new one.

The Exton unit, considered semi-commercial, is but the forerunner of a full-scale plant to be built at Kings Mountain, N. C., site of the company's spodumene deposits. Contracts are now being let, and the plant should be nearing completion within a year.

And you may be hearing more about a new acetylene process soon. Delhi Oil Corp. (Dallas) is carefully appraising one but won't say yet whether or not plans for a production unit are in the making.

Chemicals manufacture still holds its lure for non-chemical companies. John Deere & Co., maker of green-colored farm tractors and equipment, is the latest to contemplate the plunge.

Deere plans an \$18 million venture into ammonia and urea, but plant site and other details are indefinite pending outcome of its application for a certificate of necessity.

No matter what you read, work on new TB "cures" is still experimental. But preliminary results are so encouraging, drug companies couldn't continue to keep the research hush-hush.

These are the experimental drugs and the companies involved:

- Isonicotinyl hydrazide, appearing as Rimifon (Hoffman-La Roche), Nydradid (Squibb), and Pyricidin (Nepera Chemical).
- Isopropyl derivative of isonicotinyl hydrazide (Hoffman-La Roche's Marsalid).
- Niacin-related compound (Lederle's Aldinamide).
- Glucosyl derivative of isonicotinyl hydrazide (Hoffman-La Roche).

... The Editors



# BUSINESS & INDUSTRY . . . . .



**JOB-HOPPING:** Light today, but WSB inaction portends a murky morrow.

## Stability Mid Turmoil

Chemical industry shows little manpower turnover while many industries languish in job-hopping fever.

Wage and Salary Stabilization Boards, buried under mounds of backlogged cases, are culprits in growing trouble.

Problem grows worse, but some relief may be in sight as WSB and SSB get local offices under way, work out from under.

Last week, labor leaders and top management, their collective breath held, watched growing signs of relief from the harassment of increasing manpower turnover. The signs: WSB looks as if it is ready to swing into high gear at last, SSB now acts as if it is alive after all.

Although of all industries the chemical segment seems to be suffering least from the evils of abnormal turnover, unless the wage and salary boards begin to show action it will certainly join its less fortunate aircraft and machine tool brethren. The last few months alone have seen the situation grow worse, particularly on the West Coast where competition is keen from higher-paying, defense-booming industries.

**Case Jam:** What has happened is simply that the wage and salary freeze, combined with large industrial expansion, has made it impossible to keep employees happy without getting

approval from one of the boards. The result is a jam of 17,124 back cases in WSB.

This means in turn that to get a raise a man has to change his job and go to work at a higher starting salary or wage. Add to this the many new and highly expanded companies paying rates out of line with older firms, and the situation becomes obvious. Both unions and companies are frantically trying to get their cases through the boards to head off mass quitting; at the same time are trying to keep men on the job until approval comes.

One favorable factor: When board approval does come it is retroactive. But many men tend to follow the "bird in hand" philosophy rather than wait. Another way out has been taken by many employers—give the raise and take the consequences, which could be stiff.

**Chemicals Serene:** In the chaos chemicals seem relatively serene. The

industry has generally been well-paying, and working conditions are rated high. Most chemical concerns seem to have managed to maintain their wage and salary rates at the prevailing level for the area. This is particularly true in areas where large concentrations of defense industry are not located.

In general the industry reports that turnover is very low, even to the point of being abnormally so. This direct contrast to other industries can only be explained by its generally healthy state, the high regard for workers' welfare that characterizes many chemical firms, and the length of service of many chemical employees. But there are signs that the upheaval is beginning to be felt, particularly among the scarce engineers and chemists.

**Two Areas Already:** Already two major areas are showing signs of joining the general trend: Chicago and the West Coast. Both these areas have high concentrations of such critical industries as aircraft, machine tools, and electrical equipment, which offer the quick dollar that young men like.

In Chicago, chemical execs are saying there is quite an army of "floaters" today. The younger men seem to be moving around. There seems to be less tendency than of old to settle in one spot, more to look for better pay elsewhere. This is true of everyone, but more so of young engineers and chemists. The over-all picture is one of a definite trend towards job-hopping.

With a few conspicuous exceptions the West Coast is even worse. Some companies are caught in a three-way battle with the union, WSB, and their disgruntled employees. Others, maintaining a normal work week, are being hard pressed to compete with companies on long hours and overtime schedules. Their basic rates are the same, but the extra weekly money is draining the best men.

The Seattle area appears to be among the worst for the chemical industry. Here the companies are in direct competition with ship-building and aircraft industries, and Alaskan jobs. So far WSB has not helped many of these firms to compete with comparable rates.

**Not The Rule:** Nevertheless, these cases must be viewed as the exceptions; even in the same areas many companies in the chemical field have

faced few turnover problems to date. That the situation will get worse is obvious, but with last week's signs of life from the boards, it appears that things may be in hand by the middle of the year. If not, look for worsening turnover trouble in the industry.

## Fluoride Fray

Water fluoridation was back in the news again last week—this time in violently contradictory evidence presented before the Delaney Committee. On one side of the verbal combat area stood the U.S. Public Health Service, with support from the American Medical Association, the National Research Council and dental groups (CW, Dec. 22, '51). On the other, as brought out in the Washington hearings, Alfred Taylor, of the University of Texas' biochemical institute, MIT's Robert S. Harris, nutritional biochemist, and Dr. cum-Rep. A. L. Miller, a member of the Delaney group.

Taylor reported to the committee that experiments he has conducted indicate that addition of fluorides to drinking water shortens the life span of mice destined to die of cancer and other diseases.

"Those who advocate fluoridation consider that one part per million is perfectly safe for everyone," he stated, but "... it is admitted that one and a half parts per million of fluorine has observable toxic effects for many individuals."

Taylor rapped USPHS for giving "unqualified endorsement" to fluoridation.

Harris joined in reporting that there has not been enough research to prove that fluoridation is harmless.

Said Committee Member Miller: "We have been moving too fast" in fluoridation.

**USPHS's Reply:** Federal dental officials testified earlier on the subject, reporting on 25 years of fluoridation research and pointing to the national organizations which had approved the practice.

"In my opinion," said Assistant Surgeon General Bruce Forsyth, "not one of these organizations would endorse water fluoridation if they had a single reservation regarding its safety, its practicability or its value in terms of dental health."

In cross questioning, Committee Counsel Vincent Kleinfeld brought out that while the National Research Council has approved fluoridation, members of the council had earlier expressed opposition to the practice.

When queried on Taylor's work,

USPHS's John Knutson termed it "fragmentary" and said that it did not upset the "great volume of research on physiological effects of fluorides."

He questioned Taylor's assertion that 1.5 million parts of fluoride cause toxicological effects. Even at 5 parts, he reported, no such effects had been seen.\*

On relation of fluoridation to cancer, Knutson testified that occurrence of cancer was slightly higher (but statistically insignificant) in cities without natural fluorides in water.

**Toothy Question:** Actually, evidence by both sides can, and will, be cited by persons with like opinions. The preponderance of the evidence seems to lie with the pro-fluoridators.

Meanwhile, four Indiana scientists, writing in the *American Journal of Public Health*, state that there is insufficient evidence at present to justify use of any fluoride compound other than sodium fluoride. However, they do not recommend that a city stop using other agents experimentally.

"The general fluoride program," they report, "has given assurance of a noteworthy reduction of dental decay when using sodium fluoride. If by chance unsatisfactory sources of fluoride are chosen and fail to produce the same results as sodium fluoride, it could jeopardize the program as a whole . . ."

## EXPANSION. . . . .

**Sulfur:** Shell Oil of Canada, Ltd., has begun recovery of sulfur from the hydrogen sulfide content of natural gas at its Jumping Pound, Alberta, plant. The company expects to produce at least 9,000 tons annually, to increase this as gas production rises.

**Petroleum Catalysts:** Davison Chemical last week began construction of its \$7 million-plus catalyst plant ten miles south of Lake Charles, La. Company officials hope the plant will be in operation early in 1953.

**Silica Gel:** Production of this desiccant will be doubled this week at Culligan Zeolite's San Bernardino, Cal., plant. Plant expansion was complete last fall, but production has just reached capacity.

**Rayon Tire Cord:** An increase of 15 million pounds in cord production can

\* Committee acceptance of Taylor's tests on mice had some observers wondering, since one of the main points made by earlier anti-industry witnesses, was that results of tests on mice and other animals cannot be reliably extrapolated to humans.

be expected by the end of 1953 when two expansions by Industrial Rayon are complete. The company is adding facilities for industrial material production at its Cleveland and Painesville, Ohio, plants. Expansion cost is estimated at \$15 million.

**Vinyl Chloride/Acrylonitrile:** Concurrent with construction of a new dynel staple spinning plant at Spray, N.C., Carbide and Carbon Chemicals Co. will expand its production of vinyl chloride at South Charlestown, W.Va., and acrylonitrile at Institute, W.Va. Total overall expansion cost is \$30 million.

While Carbide's vinyl production is captive, it has been selling much of its acrylonitrile. The company sees a good chance that in the future it will need all its production for its own use.

**Tar Products:** A \$1 million expansion program will double tar processing facilities of Reilly Tar & Chemical Corp. at Cleveland. The expansion is slated to go onstream in 1953, will handle tar from two new batteries of coke ovens Republic Steel is now building.

## Well-Turned Phrases

**New York purchasing agents and salesmen,** who crowded into the Hotel Commodore's grand ballroom last week for their first Purchasing-Sales dinner since 1950, heard a multiplicity of comments on the state of business and on Government economic controls.

But while such *bon mots* are far from scarce at business banquets, they seldom have been phrased as well as they were by Du Pont Vice President J. Warren Kinsman, George Renard, secretary-treasurer of the National Association of Purchasing Agents, and an anonymous misanthrope at the hotel's bar later in the evening.

Sample epigrams:

"A good executive goes around today with a worried look on his assistant's face."

"The Government uses a calculating machine which can only add and multiply."

"We are exerting our greatest effort to keep the world supported in a manner to which it has not been accustomed."

"You can get a discount on just about everything—including taxes—if you just know the right person."

"Government experts are men who make no small errors while sweeping on to the one grand fallacy."



SOVIET CHEMICALS: From five year plans and captured plants, a growing output.

## Iron Curtain Chemicals

War potential goes hand in hand with chemical capacity. That's why chemical industry reports—official or unofficial—from the Soviet Union and its satellites—are scanned so avidly in the chancellories of the West. CW's latest roundup shows Russia gaining chemical-military strength.

The Soviet Union has regained and exceeded its prewar place in the ranks of chemical producing nations. Today Iron Curtain production ranks second only to that of the United States, probably accounts for more than 14% of the world output.

World War II, of course, interrupted the growth of Russia's chemical industry. German occupation cut out the country's most important chemical plants—the soda works at Lisitchansk and Slaviansk; the nitrogen synthesis plants at Stalino, Gorlovka, and Dneprodzerzhinsk; the superphosphate mills of Odessa and Vinnitsa.

But between 1942 and 1945, the Soviet economy through American Lend-Lease received machines and equipment to make explosives, crack oil, produce synthetic rubber. Any losses sustained in the German invasion were made up out of U.S. exports. At war's end the country was in good shape to get back on its feet.

**Five Year Plan:** Actually, the task allotted the Soviet Chemical Industry by the Five Year Plan, 1946-1950, was to reach again prewar production levels, and if possible outstrip them by 150%.

Thus soda output was supposed to

jump to 800,000 metric tons annually; potash salts to exceed 1938 figures by 130%; nitrate production, 180%. Total fertilizer demanded was in excess of 5.1 million tons.

At the same time synthetic rubber figures were to be doubled; synthetic gasoline upped to 900,000 tons; two aniline works, two paint and varnish factories, and two plastics plants were to be built. The orders were to push chemical combines in Berezniki, Stalinogorsk, Chirchisk, Gorlovsk, and Dneprodzerzhinsk to capacity.

But this first version of the Five Year Plan was revised, its target figures raised. For whole plants of the East German chemical industry were dismantled, carted away management and all. Coal hydrogenation works were shifted to the Tcheremov region, there re-erected into a single "combine." Numerous factories for making Buna-N rubber, chemicals and pharmaceuticals suffered a like fate.

In addition, installations in the former Baltic republics and in Poland that had made superphosphates, bitumen derivatives and chemicals based on the dry distillation of wood, were re-opened, put on full schedules.

**Secret Secret:** The increased target figures, treated by the commissars as state secrets, have never been published, but the Soviet has boasted that its chemical industry more than met the mark in 1946 with 105% of the revised goals, in 1947 with 114%, in 1948 with 116%. For 1949 and 1950, the Reds have made claims to similar 100%-plus records.

Few actual production figures are available of course, but the dribs and drabs of information that do filter through the curtain are indicative of Russian progress. For example, sulfuric acid production is almost wholly dependent on pyrite deposits in the Ural Mountains. Before World War II, pyrite was sent to Moscow and to the Ukraine for processing. Now they've brought the plants to the pyrite. Installations at Berezniki, Molotov, Cheliabinsk, Krasno, Pervouralsk, Biellovo, and Kamerovo were working at full capacity in 1950, had upped output to more than 3 million tons.

Most Soviet sulfuric is used to make phosphoric fertilizers, mainly the superphosphates. These in turn are dependent on the world's greatest apatite deposits, those on the Kola peninsula near Finland. From these, the works at Kirovsk produces a 40% phosphorous pentoxide concentrate, has exceeded record production figures of 3.5 million tons annually.

**Alkali Bottleneck:** The manufacture of soda and other alkali metal salts has been the bottleneck of Soviet production. Annual Russian requirements for these materials have been estimated at somewhat more than 1.6 million tons. But in 1950 output had climbed to only 900,000 tons despite the fact that the soda plants at Lisichansk and Slaviansk have now been rebuilt, the works at Berezniki expanded considerably, and the unit at Volkhovsk has begun production of alkali salts with uprooted German equipment.

On the brighter—for them—side of the picture, the nitrogen combines

at Dnieprodzerzhinsk, Gorlovka and Stalinogorsk, as well as that at Stalino have been going full blast. During the war, nitrogen plants at Magnitogorsk and Kemerovo were added to the old combine at Chichirsk.

**Potash Riches:** And of course, the Soviets control one of the richest known potash deposits in the world, a cache of some 18 billion tons at Solikamsk (near Molotov).

These plus the potash mines at Wieliczka in Western Ukraine satisfy Russian requirements so well (1950 production: 700,000 tons of potassium salts) that further deposits at Kazakhstan and Uzbekistan need not be worked.

But the Soviet Union, early in the game a top producer of synthetic rubber, has lost its place to U.S. producers\* in spite of the fact that during and after the war its production rose from a prewar 85,000 tons to 220,000 tons in 1949 and 250,000 tons in 1950.

Production has been carried out with potato-derived alcohol as a source of butadiene and both ethylene oxide and acetylene as alternate basic materials for acrylonitrile. Utilizing calcium carbide (production at Erivan has topped 60-70,000 tons annually; that at Kirovakan, 20,000 tons), the Erivan combine alone has been able to supply 75,000 tons of acetylene to the economy, and the relatively new combine at Sungaiti in Eastern Siberia is said to be producing more than 25,000 tons of rubber annually using only ethylene as the primary hydrocarbon raw material source.

Finally, pharmaceutical output has also been on the upswing: Prices of all ethical and veterinarian drugs have been dropped 25% or more. Penicillin production centers in Riga and Tiflis have upped their figures more than 7½ times in the last two years, and sulfa drugs are reported to cost less than half their former prices.

While these figures, like all we are able to glean from Soviet reports are vague, they do—like refugee chemist Joseph Winkler's report on synthetic benzene (CW, Jan. 12, '52)—indicate a lively if not desperate production effort.

All in all, it would be foolhardy to underestimate not only the Soviet Union's technological ability, but its productive capacity as well. Rich in resources, rich in manpower, and ruthless in exploitation of both, Russia may well overcome a late start in the technological race.

\* Estimated 1951 production for the U.S.: 750,000 tons; for Russia, 300,000.



PRIME SUBJECT: European bigwigs talk shop with management, labor at Dow.

## Impact Of "Impact"

Back in Europe, 27 European chemical executives met late last month in Paris with the rest of the 300 members of the first International Management Productivity Mission to hash over what they learned in our plants and offices, lay plans for future follow-ups. Result: Plans for a reverse "mission" soon, exchange of inter-European know-how.

Dubbed "Operation Impact," the intensive industrial tour of the U.S. was dreamed up by ECA in the idea that European productivity, far below ours, could be upped by giving its business leaders a better understanding of our policies and methods.

Taking the job of gathering top men from a significant segment of European industry and arranging 25 different tours, the National Management Council rounded up the largest, most comprehensive group of foreign industrialists ever to come to this country. Made up of presidents, chairmen, directors and managers, the 300 men own or manage 340 corporations worth \$7 billion, employing over 2 million workers.

In the chemical industry alone NMC arranged three different tours. The European CPI men were wined, dined, and thoroughly briefed on American chemical operations in talks, forums, meetings with workers as well as management, and detailed plant visits. Doing their best to see that the visitors came away with a broad and accurate picture were such American firms as Dow, Hercules, Hooker Electrochemical, Esso Standard, Merck, Parke Da-

vis, U.S. Rubber, Procter & Gamble, and Lever Bros.

**Reverse Impact:** Main result is the extension of invitations for the reverse tour. Such a reverse mission would probably take place in early 1953, and be a more decentralized operation than ours. Tentative planning in Europe seems to favor the European chemical industry, for example, making the arrangements for American chemical leaders to visit the more important plants in the various countries.

While the reverse tour is partly to return our hospitality and show off their own plants, the deeper reason behind it is the strong feeling among the Europeans who came here that our industrialists do not understand the special problems of European industry. In the many letters written to the NMC by members of the mission, the view is expressed that Americans are inclined to regard adoption of American methods as the cure-all for everyone else's industrial ailments.

There seems to be a conviction that American businessmen do not quite realize the troubles of Europe. The U.S., for example, has increased productivity per worker 250% since 1900, while Europe has dawdled. But in that time two world wars have decimated Europe, while actually building up the U.S.

Europeans are certain that U.S. industrialists do not understand the marketing, manufacturing, sales, and supply problems of an area divided into eighteen sovereign nations with different laws, tariffs, and national jealousies. Marketing alone presents a



difficult problem when dealing with other countries; a product must not only cross a border, but actually enter a different culture. The homogeneity of the U.S. market is a prime factor in making our mass production methods work. Europe, as yet, has no such market.

**Labor Tops:** Europeans show their greatest interest in our labor relations. These facets, they agree, are most impressive and surprising: Rapport between management and labor on basic matters, informality of labor relations, company feeling of many workers, lack of class consciousness, and general absence of industry-wide bargaining.

All this is in sharp contrast to the timeworn European system of a stern and aloof paternalism towards labor, much of which still persists in spirit. It is equally far removed from the present situation that finds labor in the saddle, largely as a result of the old paternal attitude. After viewing the American methods, most of the Europeans realize that the old way must give way to a new spirit, but that labor domination is not the answer.

**PR Amazes:** Our public relations and marketing practices made a deep impression on the visitors. It was even pointed out by some that there is no way of translating the term "public relations." Many admitted that Europe has no conception of public relations, took back examples of our PR material to show to colleagues and employees.

They are keenly concerned with the percentage of productive personnel to non-productive in our industries—for Europe this is a vital matter—and are favorably impressed by the depth of our management, something that is not true of European industrialism.

**Neighbors Meet:** One of the prime features of the trip in the eyes of many of the visitors was the chance to meet each other. Many of them expressed the paradoxical fact that it took a visit to this country to get them together. The upshot of this meeting far from home has been a friendlier feeling, now that they are once again in their own bailiwicks.

At the Paris meeting the possibility of organizing to exchange productivity information among Western European industries was seriously discussed for the first time. Such exchange would be directly among the businessmen without government involvement, and go as far as exchanging engineers, executives, and foremen.

**Production Methods:** The Europeans were not visibly impressed by U.S. production methods, since our methods are actually quite similar. Al-

bert Schafer, chairman of Harburger Gummiwaren-Fabrik Phoenix A.G., remarked, Firestone's synthetic rubber plant was a "copy of German plants."

On the other hand, visitors to Merck, Parke Davis, and other drug houses found the "manufacture of pharmaceuticals on a large scale very impressive." They were particularly amazed at the mechanization of packaging such products.

**International Cooperation:** Possibly the major impact of "Impact" is the enthusiasm it has aroused for international business cooperation. Belying the climate of intrigue, suspicion, and cartels are such suggestions as that of Konrad Weil, managing director of Chemische Fabrik Griesheim, that "we should send more delegations from our plants to the various scientific and technical congresses which are being held in the different countries, so that a circle of men who know each other be extended slowly from the top down."

An even more radical suggestion comes from another German industrial leader, "The young man between 20 and 30 is . . . the biggest supporter of international understanding. So much is done for the education of young people in other sections but industry. The hard working young man, who is trying to consolidate his job, has hardly a chance to see the other world and other factories. It is these men who should be helped to visit other countries."



### Price Patroller

ELLIS ARNALL, who "only knows about price controls what I read in the newspapers," has taken over the hand-blistering reins of the Office of Price Stabilization. The former Georgia governor replaces Mike DiSalle, who's running for the Senate.

## KEY CHANGES . .

**George L. Bond:** To president, Consolidated Chemical Industries, Inc.

**Clinton F. Robinson:** To president, The Carborundum Co.

**William B. Brown:** From plant manager, Pittsburgh Coke and Chemical Co., to manager, chemical plant, Kankakee, Ill., General Mills Research Labs.

**Fred Olsen:** From director of research and development to vice president for research and development, Olin Industries, Inc.

**George W. Kelch:** To vice president, Fisher Scientific Co.

**Edwin H. Fisher:** To vice president in charge of research and production, Fisher Scientific Co.

**Louis McDonald:** To director, development and control laboratories, Keelite Products, Inc.

**Thor J. G. Lonning:** From laboratory and product development manager to director of research and manufacturing, Dagmar Chemical Co.

**Donald F. Martin:** From New England regional sales manager to general sales manager, Dagmar Chemical Co.

## Firm, Round, Packed \*

"Tobacco chemistry" was thrust into the spotlight this week by two raging controversies. One battle pivoted around the Philip Morris contention that diethylene glycol is less irritating in cigarettes than glycerine (a claim with which the Federal Trade Commission coldly disagrees); the other hassle concerned Lucky Strike's unabashed assertion that Luckies are the highest quality of all cigarettes—and the enlistment of two prominent consulting chemists to bolster the credibility of its statement.

Philip Morris has long been a maverick among cigarette makers and both its sales tactics and sales success nettled its competitors. Most nettling of all, however, has been the nine-year trumpeting of its claim that PM's "are non-irritating or less irritating" than other brands.

Pressed for a reason why, PM attributes it all to the use of diethylene glycol as a humectant instead of the more conventional glycerine. (The company has used 2.74% glycol in-

\* CW expressly forbids the reproduction of this report, or the use of any excerpts therefrom, for advertising purposes.

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\*Reg. U. S. Pat. Off.

PLEASE FILL IN AND MAIL

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We are interested in ☐ PERFUMES  
☐ ODOR NEUTRALIZERS for use in the  
manufacture of products checked be-  
low. What do you recommend?  
☐ FORMALDEHYDE ☐ ADHESIVES  
☐ CLEANING COMPOUNDS ☐ INK  
☐ FUEL OIL ☐ LUBRICATING OILS  
☐ SPRAYS ☐ WAXES ☐ PLASTICS  
☐ RUBBER ☐ LATEX ☐ LEATHER  
☐ PAINTS or LACQUER ☐ TEXTILES  
☐ ROOM or ☐ HOSPITAL  
DEODORANTS  
☐ OTHER PRODUCTS: \_\_\_\_\_

COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_

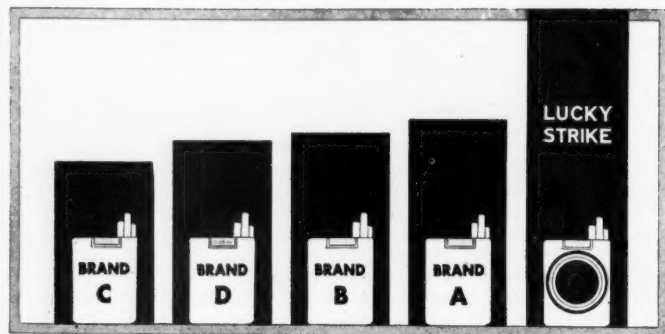
ATTENTION: \_\_\_\_\_

TITLE: \_\_\_\_\_

**FRITZSCHE**  
*Brothers, Inc.*

PORT AUTHORITY BUILDING  
76 NINTH AVENUE, NEW YORK 11, N. Y.

## BUSINESS & INDUSTRY . . . . .



QUALITY GRAPH: Facts, facts, facts to sweep away the "smoke dreams."

stead of the usual 3.65% glycerine since 1933.) The nub, says PM, is that glycerine forms irritating acrolein when it burns; diethylene glycol doesn't.

Last week, after hundreds of thousands of words of testimony had been recorded, the FTC issued a cease-and-desist order against PM, said in part: "Smoke from all cigarettes is irritating . . . the extent of irritation depends upon the individual smoker, frequency and rapidity of smoking, length to which cigarettes are smoked, the extent of inhaling. Acrolein is also a product of combustion of tobacco . . . and the use of 3.65% glycerine does not supply sufficient acrolein to have any significant effect . . . upon irritating properties of smoke."

**Charges, Countercharges:** The Glycerine Producers' Association promptly crowed: "Glycerine was and continues to be the moistening agent favored by the majority of cigarette producers . . . and PM attributed . . . less throat irritation . . . to use of a different moistening agent. Expert testimony . . . called by the Commission's own attorney . . . showed by a preponderance of scientific opinion . . . that moistening agents . . . made no significant difference in irritability. Evidence disparaging glycerine was fully refuted . . ."

The same day PM said irritably: "The initial decision of the trial Examiner . . . will be appealed immediately. This decision (we) regard as unsupported by the evidence . . . substantially all of the adverse testimony was subsidized by competing tobacco firms or by the American Association of Soap and Glycerine Producers Inc. . . ."

"The Examiner . . . did not consider or have before him . . . any independent research . . . to substantiate the complaint or support the evidence supplied by our commercial competitors. PM offered . . . results

of thousands of experiments conducted by noted scientists in leading universities, medical schools, hospitals . . . In the traditional pattern of scientific development and research, PM, aware of the irritating properties of hygroscopic agents used in other cigarettes . . . endowed research . . . into comparative properties. Distinguished scientists . . . were given free rein . . . to experiment as they saw fit . . . with complete unanimity . . . their work substantiating the (PM) claim . . ."

There, this week, the protagonists stood. And, in view of the appeal PM has lodged with the FTC, thus the argument will continue—bitter, beclouded, unresolved—for some time to come.

**Words and Tests:** Even while this sulfurous debate was boiling along, "tobacco chemistry" was being bruited about in another arena. Lucky Strike was shrieking over the radio, on television and in newspapers and national magazines, that Luckies were THE top quality cigarette and suggesting that many a competitor had been a deceptive cad. "Words, Words, Words" it chanted "Nose Claims, Throat Claims, Smoke Dreams . . . (that's what you've read or heard in other ads) . . . but we have cleared away the smokescreen of Claims, Claims, Claims . . . give you Facts, Facts, Facts." In support of all this LS produced a bar graph of quality (*see cut*) and these carefully worded "certifications":

Said consultants Froehling and Robertson (Richmond, Va.): "In our judgment the above bar graph accurately and reliably depicts the relative quality of these brands. It is our conclusion that LS is the best made of these five major brands."

Added Foster D. Snell, Inc. (New York): "we confirm that in our opinion the properties measured are all important factors affecting the taste



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## FERMENTATION BUTYLS

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Commercial Solvents Corporation, primary producer of carbohydrate-fermentation butyls, announces substantial price reduction on butanol and butyl acetate. Here is a dependable source of quality butyls—available in quantity at new low prices. Write today. Industrial Chemicals Division, Commercial Solvents Corporation, 17 East 42nd Street, New York 17, N. Y.



INDUSTRIAL CHEMICALS DIVISION

## COMMERCIAL SOLVENTS CORPORATION

ACIDS • ALDEHYDES • ALCOHOLS • ESTERS • AMINES • AMINO ALCOHOLS • NITROGEN  
COMPOUNDS • NITRO COMPOUNDS • SOLVENTS • PLASTICIZERS • INTERMEDIATES



of cigarette smoke. We do verify that the above chart correctly shows that LS ranks first in quality."

Even in not-easily-amazed ad circles the LS campaign stirred up plenty of wrath. (The ad magazines *Printers' Ink* and *Tide* both decried the LS activities as did several ad associations. Their fear: that great harm was being done to believability of advertising.)

In chemical quarters there were raised eyebrows too and a parallel fear: that the believability of the public in chemical consultants might be jeopardized. (A survey conducted by *Tide* showed that 79% didn't believe the LS claim; 16% gave it partial credence; 2% accepted it fully.)

There were few chemical men, of course, who questioned the veracity of the specific statements made by both reputable consulting organizations; there were many, nonetheless, who wondered just what quality factors had been appraised and if it were "proper" to permit LS to flaunt the quotes about.

The organization which had to bear the brunt of the fire was Snell.\* (Probably because although Froehling and Robertson is prominent in the South, Snell is internationally known. Too, Snell has grown rapidly, realized a substantial measure of success—and any well-known successful business is always an attractive target for critics.)

These, say Snell vice president Cy Kimball (who signed the statement) and LS's research director Hiram Hamner, are the "quality factors":

- Moisture content
- Efficiency of wrapping (to maintain factory moisture until purchased)
- Air flow
- Weight-volume relationships of tobacco in the cigarettes
- Stem content
- Dust content
- Loose ends
- Width of cut of tobacco

Some are, obviously, positive factors: uniformity of weight (a cigarette weighs a gram), circumference, moisture content; evenly shredded tobacco; firmness; free, even draw; efficient wrapping. Others are negative: free from stems, loose ends, dust. (Quality of tobacco is conspicuously missing because the FTC forbids reference to such quality. LS says, however, that

it maintains a system of pre-analysis of tobacco on which it bids, keeps a close eye on chemical uniformity of its blend. Main tyrants: nicotine and nitrogen.)

Cy Kimball says: "In arriving at the Index of Quality the factors covering uniformity of manufacture are treated as deviations from the standard on cigarettes purchased on the open market . . . from the six months average for that brand. The tests are accurate, reproducible and conducted fairly and without partiality. The basis of selecting standards is sound and fair, has a background of ten years of data."

Plain as a pikestaff is this fact: LS is claiming, and the consultants are certifying, only that its product is the most uniformly made and that the factors evaluated do affect taste. Whether workmanship—a well-recognized factor in meeting all manufacturing standards—is entirely synonymous with cigarette quality—as the ad headlines far from subtly suggest—is another question.

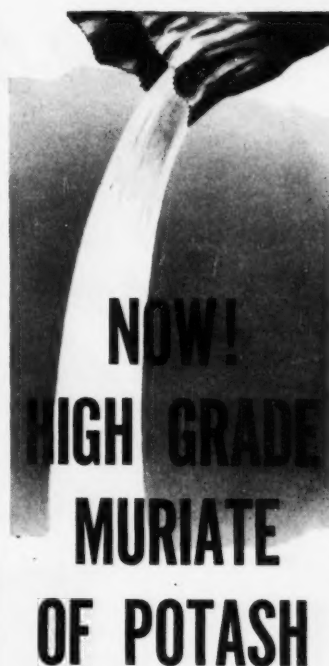
**Consultant's Position:** The other poser—whether using such signed "testimonials" by professional chemists is right or wrong—is one which the Snell organization long ago settled in its own mind. In 1935 its Board decided that any work it did for any client could be reproduced and distributed by the client. It differentiated clearly, however, between the publication of scientific information and technical data on the one hand and testimonials consisting of uncritical or inadequate statements on the other.

The Snell name, they dictated, could be used in advertising only to substantiate facts and only with copy approval—to ensure that statements are not lifted from context to convey an erroneous impression of the tenor of the report.

Heretofore, Snell contends, there have been a multitude of "endorsements" of various products by consultants who did only a partial job of product evaluation. Too, more such work may be done in the future. (Analyses to certify that A is low in ash, B is high in moisture, C has less salt-peter.) All such single-facet studies turn up fragmentary observations, permit clients to balloon their significance senselessly.

The opportunity for such chicanery in "tobacco chemistry" is tempting; no "overall set of quality standards" has been established. With the setting up of the LS criteria, thinks Snell, the danger has been curbed—"it is a positive step forward in a

\* Snell and Froehling and Robertson are neither the first nor the only consultants to become involved with cigarette companies. A year ago Arthur D. Little, Inc., proud of its taste panel, allowed its name to be used as a basis for Chesterfield's "no after taste" claim. Quick as the flick of a Ronson, the Little name was withdrawn. Latterly Chesterfield has referred only to "a world famous industrial research organization."



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*On your scale material becomes money!*



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These are the scales backed by Toledo's half-century of experience in Research and Engineering that has produced 80% of the major advances in scales during this time.

Toledo engineering has not only specialized in the direct design of weighing machine mechanisms, but also in the many associated fields such as electronics, plastics, metallurgy, optics.

Check your needs *now*—select Toledo equipment for vital jobs in guarding materials and costs! Sales and service in 200 cities. Toledo Scale Company, Toledo 1, Ohio. We will be very glad to send catalogs.



## **TOLEDO**

### **HEADQUARTERS FOR SCALES**

field in which no standards have existed."

Nonetheless, it is obvious that LS has realized that the public has not gulped down all it has been saying. By this week it was tempering the panting prose in its ads, distinguishing between "best made" and "quality", mailing out a booklet to explain the background of its research.

Just as the violent controversy which engulfed PM will barrel along for months to come, so will the LS-Snell-Froehling & Robertson debate.

And, considering the rugged skepticism and brutal disbelief of the public, the gong which LS beats in many of its radio commercials, may well have the ring of a tocsin.

## **LEGAL . . . . .**

**Fertilizer Wins:** The case of Best Fertilizer Co. vs. San Jacinto Chemical Co., (CW, Feb. 2) in which Best accused San Jacinto of trying to force it to take part in a deal that would mean paying what amounted to black market prices for anhydrous ammonia, has been settled out of court. San Jacinto has met the terms of the fertilizer company.

**Over-Ceiling Prices:** The Office of Price Stabilization has instituted a suit for alleged over-ceiling sales against National Lead Co. The firm was named defendant to the tune of \$325,000 for treble damages in an injunctive action filed in the Southern District, New York. The suit, an "open end" action which permits a continuing audit which could result in boosting the amount of damages, is for alleged overcharges of \$109,657.37 in the sales of battery lead and various lead oxides.

## **FOREIGN . . . . .**

**Ammonia:** The German firm, Ammonia Scholven-Chemie AG, Gelsenkirchen, has again gone into the production of ammonia, with volume at the present time set at 30,000 tons annually.

**Fertilizer:** Working with the Institute de Fomento Industrial, Chemical Construction Corp. is actively contemplating the erection of an \$8 million ammonia and nitrogen fertilizer plant near Barrancabermeja, in Columbia—where the natural gas of nearby oil fields would constitute the main raw material. U.S. capital or European investments (mainly French or German) would finance the plant's equipment.

**ACTH:** An Australian drug concern (Drug Houses of Australia Ltd.) and a Danish chemical firm (Frederiksborg Chemical Laboratories Ltd.) have



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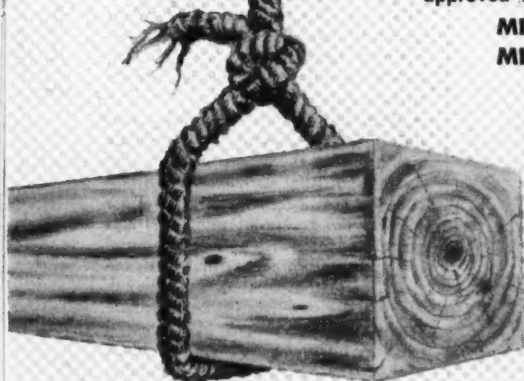
MIL-R-16060      MIL-T-11293

JAN-D-504

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# KOPPERS DIVINYLBENZENE

DVB, 40-50% DVB, 20-25%



**D**IVINYLBENZENE is used as a reactive vinyl monomer and as a chemical intermediate.

As a vinyl monomer, it is used in the production of Super Processing GR-S chemical rubbers, for the modification of styrene polymers and styrene copolymers, for incorporation into styrenated drying oils, for the production of cross-linked bead polymers useful in the production of ion-exchange resins, and for casting resins and polyester laminating resins.

**DVB, 40-50%** is composed of the isomers of divinylbenzene and ethylvinylbenzene and some diethylbenzene. This grade is particularly useful for applications which require a high proportion of reactive components.

**DVB, 20-25%** is composed of the isomers of divinylbenzene and ethylvinylbenzene together with some styrene monomer, diethylbenzenes, toluene, benzene and ethylbenzene. This grade is useful in the production of Super Processing GR-S chemical rubbers, styrenated drying oils and other products in which limited amounts of non-polymerizable compounds are not objectionable.

For further information on the properties, uses  
and reactions of Divinylbenzene write:

**KOPPERS COMPANY, INC.**

Chemical Division Pittsburgh 19, Pa.



joined together as Acton Laboratories Pty. Ltd. for the purpose of setting up and operating an ACTH factory in Australia. The Danish partners recently developed instruments for inexpensively extracting pituitary glands from pigs, sheep and cattle.

Completion is expected next year. No surplus for export purposes is anticipated.

**Germany:** The Dormagen plant of the former I. G. Farben empire is to retain its position within the Farbenfabrik Bayer-Leverkusen complex, instead of being set up as an independent unit as was originally intended by Allied policy makers. The German government stormily contended all along that any move to split the plant from Bayer-Leverkusen would result in a firm incapable of economical operation.

Dormagen produces about 50 tons of Perlon monthly, plans to triple this figure by March; the plant also produces rayon and synthetic wool.

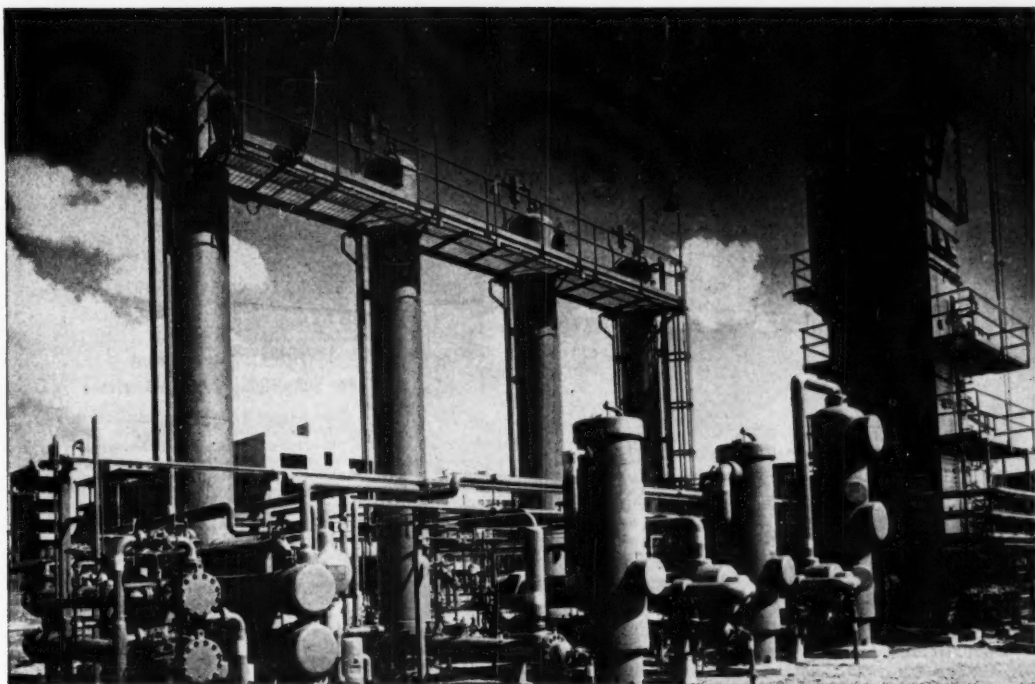
**Pharmaceuticals:** Israel is making a strong sortie in the pharmaceutical industry, marketwise. Indications along this line include plans for substantial purchases of raw materials and technical equipment, along with a surprise shift in export drives. Since the end of the war in the Middle East, Israel has been swinging its pharmaceutical exports from its former focal point, the neighboring Arabian countries, to backward countries like Roumania and Bulgaria and even to pharmaceutical-wise France and Switzerland.

Expected to arrive in Israel soon is machinery from the U. S. said to value more than \$120,000. Moreover, the industry has just been allocated \$500,000 for health and medical supplies, out of the U. S. grant-in-aid, with a second request for an additional allocation already on file.

**Iraq:** The four-year development program planned for Iraq and estimated at \$470 million gained new impetus this week. The International Bank for Reconstruction and Development announced recommendations for industrialization drawn up by its mission to Iraq.

With Iraq's industrial development naturally linked with its immensely rich oil fields, the most promising item on the industrial horizon is the establishment of a chemical plant near Kirkuk, the center of most of Iraq's petroleum production. Using natural gas and gypsum as raw materials, the plant would be capable of producing 500,000 tons of ammonium sulphate fertilizer, 100,000 tons of elemental sulfur, 10,000 tons of carbon black and 300,000 tons of cement, annually.





## HYDROGEN... pure and low cost for Lever Brothers Company at Los Angeles

FOR THEIR NEW Los Angeles plant, Lever has again installed a Girdler HYGIERTOL\* plant to assure a dependable source of high-purity hydrogen for hydrogenation of vegetable oils used in Lever products. This plant, shown above, is the second Girdler hydrogen plant purchased by Lever Brothers Co.

Hydrogen purity with this process generally exceeds 99.8%. Instruments control the plant, which is practically automatic. Just one man is needed to supervise operation and to maintain hydrogen production at the desired rate.

Process material costs, as well as labor costs, are low. HYGIERTOL plants use natural gas, propane or butane for

process materials. These hydrocarbons are reasonable in cost, are readily available and easy to handle.

HYGIERTOL plants are built outdoors to save the cost of a building.

For planning and construction of your gas processing facilities, call on Girdler. You can do so with confidence. The Girdler Corporation, Gas Processes Division, Louisville 1, Kentucky.

Write for bulletin describing our services. The Girdler Corporation designs and builds plants for the production, purification, or utilization of chemical process gases; the purification of liquid or gaseous hydrocarbons; the manufacture of organic compounds.



Entrance to Lever Brothers Company new Los Angeles plant reflects modern design of all facilities and equipment. This plant will supply a variety of soap and shortening products to Western market areas.

\* Hygirtol is a trade mark of The Girdler Corporation

The **GIRDLER** Corporation  
Gas Processes Division

Now EVERY laboratory can use  
modern spectrophotometric methods

## THE BECKMAN MODEL "B"

*accuracy . . . speed . . . simplicity*



Spectrophotometric measurements—based on analysis of liquid, solid or gaseous samples by light absorption—have become one of the most important methods of today's

process control operations. Complicated analyses requiring hours to perform by standard chemical procedures are now completed in a matter of minutes using modern spectrophotometric methods.

Up to the present, *quality* instruments have been beyond the reach of many laboratories. Now, however, the development of the new Beckman Model "B" Spectrophotometer makes available for the first time a *precision* instrument—convenient and simple to operate—*yet versatile, accurate and low-priced.*

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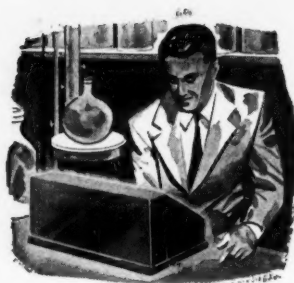
It features direct reading absorbance and transmittance scales . . . complete elimination of stray light from 360 to 1000 millimicrons—less than 1% even at 320 millimicrons . . . interchangeable phototubes for wider wavelength range . . . inexpensive sample cells . . . 4-position cell carriage for faster readings . . . and many other important features.

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Here is an instrument carefully engineered so that stray light effects are negligible . . . an instrument where readings can be reproduced on sample after sample without "drift" or other inaccuracies . . . where band widths can be readily varied to permit the high resolution required in many analytical problems . . . where a variety of absorption cells can be used interchangeably to provide optimum path lengths . . . and where many other outstanding features are provided to assure maximum versatility, accuracy and dependability.

Be sure to get the full details on the many money-saving, time-saving applications for the Beckman "Model B" in today's chemical laboratories . . . and on the many unique advancements built into this instrument that make it such an outstanding value in its price range. See your authorized Beckman dealer—or write direct for complete data.

\* Beckman Instruments include: pH Meters and Electrodes \* Spectrophotometers — Radioactivity Meters — Special Instruments

# DISTRIBUTION.

## The Long Run Pays

Vicara escapes the stigma of "substitute," attached to many synthetic fibers, through long-range watchdogging by the maker.

Initial push by Virginia-Carolina tagged fiber as a blending fiber instead of an "ersatz" to fill in for wool.

To keep Vicara from the fate of "wrong fiber in wrong place", V-C hired Harris Research Laboratories to pass on all proposed blends.

When the price of wool started skyrocketing after outbreak of the Korean trouble, Virginia-Carolina Chemical Corp. did some serious worrying about the future of its synthetic fiber, Vicara. Everybody wanted the now-cheaper Vicara, but a boom based on substitution alone can become a quick bust when the real thing returns. V-C didn't fall into the trap, and last week CW sent an editor to interview John H. Karrh, fiber division's manager, to find out why.

Answer: Virginia-Carolina took the long view, established rigid control of where Vicara could be used, hired an independent testing firm to run tests on all proposed blends.

**Improve The Blend:** At the outset of commercial production in 1948, the company knew it had a first-rate fiber, but it had to be used wisely. The company eschewed tagging its baby an "ersatz" wool, with all the connotations of inferiority. So the fiber division proposed, and top management agreed, to push Vicara as "the fiber that improves the blend."

Blend research started with wool, and at that time Vicara was slightly more expensive than wool. Vicara was pushed as a blend for wool on the various superior properties it could impart, such as a softer hand to the fabric, reduced itch, added dimensional stability, and moth resistance.

Even at that time V-C already had an eye on the long-run fate of Vicara, on the need to keep the fiber in a favorable light. The company wanted its fiber in only the best fabrics, and worked closely with experts of the textile manufacturing companies to assure this.

**Everybody Wants It:** Then came Korea and the price of wool headed for outer space. Everybody wanted Vicara. It soon became apparent to the company that the fiber was in imminent danger of being used as a wool substitute, its integrity ruined.

V-C management remembered only too well the dizzying rise of casein

fiber during the last war, that ended in a considerably more sickening plunge when the war ended. It had been tagged "substitute," used improperly and over-exuberantly, and wilted when the staple fibers came back. They had no inclination to repeat this or the early "wrong plastic in the wrong use" history of plastics.

The company already had a basic framework in its blend analysis methods, but something more drastic was needed. The result was that in January 1950, V-C informed its customers of its "fabric evaluation program" to be conducted primarily by the Harris Research Laboratories, an independent Washington testing lab.

Harris was picked because it had "a leaning toward wool rather than Vicara." The company wanted the manufacturer to realize the test was no gimmick to promote a larger percentage of Vicara in blends.

**Works Like This:** Now any fabric manufacturer who wants to develop a blend using Vicara can do so, but before V-C will sell the company quantities for commercial production of the fabric, the blend has to pass a rigid test made by Harris.

Harris tests each fabric, and each color of each fabric, for the "stated" composition, shrinkage, colorfastness (to light, perspiration—both alkaline and acid, wetting and pressing) and other factors. At the same time testing in V-C's own labs is continuing, as it is in the textile companies' labs. The system is really cooperative.

**No Trouble—Now:** At first the company ran into some trouble from textile people who said in effect, "We know how to blend fibers; don't tell us our business." But now everything is running smoothly.

The Harris tests are paid for by V-C, and, counting the cost of operations in V-C's own labs, the price of the tests to V-C per new fabric runs to about \$25,000.

There is little doubt that the plan is now popular, is actually winning

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### DISTRIBUTION . . .

more friends for Vicara than any too-liberal selling policy would. One mill actually spent an additional \$50,000 on one fabric doing its own testing.

As a partial indication that rigid standards are no block to high sales, Karrh says, "Plans are underway to increase production to between 10 and 15 million pounds annually by early next year, and to between 20 and 25 million pounds annually a year later."

**Exclusive Agent:** Henry L. Grund Co., Cleveland, Ohio, has been appointed exclusive agent for sale of the products of Godfrey L. Cabot, Inc., Boston. The Grund company will sell carbon blacks to the paint, ink, plastics and related industries in the Cleveland and northern Ohio area.

**Expanding Business:** Under the press of expanding business, B. F. Goodrich Chemical Co. has moved its sales offices on the Pacific coast to Suite 301, 714 West Olympic Boulevard, Los Angeles.

**How To Pack:** To help manufacturers do a better job of packaging for armed forces consumption, The Hinde & Dauch Paper Co., Sandusky, Ohio, is handing out a booklet entitled, "How to Pack War Materials In Corrugated Shipping Boxes."

The booklet is No. 14 in what the manufacturer of shipping boxes calls its Little Packaging Library.

**New York Sales:** Caldwell Chemical Co., New York, has been appointed exclusive sales representative for the American Metallic Chemicals Corp., Portland, Ore.

Manganese dioxide is one of the AMC products to be sold by Caldwell in commercial quantities. Complete warehouse stocks will be maintained.

**Ansul Chemical:** The Detroit and Milwaukee sales offices of the fire extinguisher division of Ansul Chemical Co. have been moved to larger quarters. The moves were necessitated by the need for more parking space and warehouse facilities in selling the company's line of dry chemical fire extinguishers.

**Violite Pigments:** Rhode Island Laboratories Inc., West Warwick, R. I., manufacturers of Violite phosphorescent and fluorescent pigments, have named the Filo Color and Chemical Corp., New York, as sales agents for Violite pigments to the paint, ink and paper coating industries.

Filo will sell in New York, New Jersey, Pennsylvania, Maryland, Virginia, and Washington, D. C.





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Unprotected, these underground steel arteries would soon rust away. But industry has developed a life-saving sheath for them and often, the main protective material is Pitt Chem Tar Base Pipeline Enamel—an impervious product of coal.


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27

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FOR MODERN INDUSTRY**

# RESEARCH . . .

## Tailored To Fit

New, synthetic petroleum sulfonates are the news this week from Morton-Withers Chemical Co., Greensboro, N. C.

Chief selling points: High molecular weight and uniformity of composition. Lube oil additive producers are probably the best potential customers.

A new, high-molecular-weight petroleum sulfonate—one of a series of synthesized sulfonates developed in three years of research—is now being piloted by Morton-Withers Chemical Co., Greensboro, N.C. Its use as a lubricating oil additive is the product's highest commercial prospect.

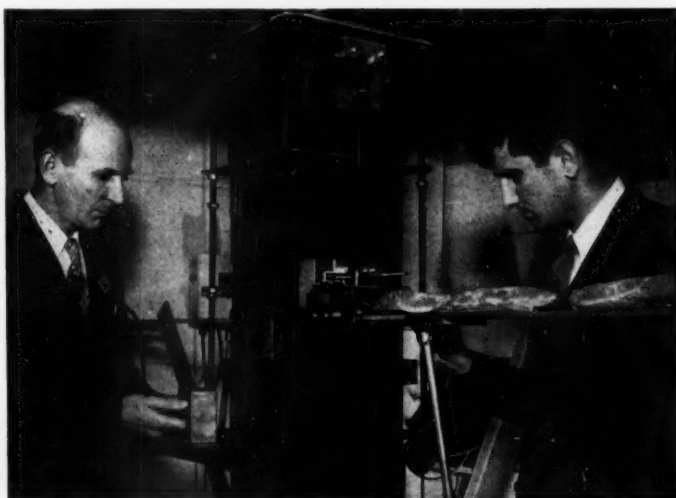
But success won't come as a result of unique physical or chemical properties. The new M-W sulfonate looks like, and is similar chemically to, petroleum sulfonates offered by Standard Oil Co. of Indiana, L. Sonneborn & Sons, Atlantic Refining Co., Oronite Chemical Co., Shell Oil Co. and others. Its chief appeal to potential consumers will be the fact that it's tailor-made to rigid specifications.

Most commercial petroleum sulfonates are by-products of white oil manufacture and lube stock refining, collected from a wide range of dis-

tillates. They're often heterogenous mixtures of varying make-up. As a result, additive producers often must change their formulations to suit their sulfonate raw materials. M-W believes its closely controlled product can capitalize on this cart-before-the-horse procedure by giving the lube oil additive people a synthetic material of constant composition.

Laboratory development of the new, high-molecular weight sulfonate was completed several months ago and a small pilot plant erected for a line on large-scale continuous production. Since, a bigger pilot unit has gone up at Greensboro; it's now producing 25,000 pounds a day, is slated for double that output by April.

If that sounds like a lot of sulfonates, take a peek at Morton-Withers' plans for the future. A certificate of necessity (not yet issued, but expected at any



## Million-Volt Killer

HARNESSING THE ELECTRON for its lethal effect on microorganisms is the goal of General Electric Co.'s researchers. Work is now under way on the use of high-velocity electrons in food and drug sterilization. Material to be treated is loaded into a unit equipped with a million-volt X-ray machine and shot with an ionization dose of one-million equivalent roentgens; little heat is generated in the process. If perfected, the method could be especially valuable for the sterilization of temperature-sensitive substances like penicillin.

**Experienced**

**Reliable**

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industrial chemicals:

Petrohol 91 (Isopropyl Alcohol)  
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Isooctyl Alcohol  
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Acetone  
Methyl Ethyl Ketone

Ethyl Ether  
Isopropyl Ether  
Diisobutylene  
Polypropylenes  
Butadiene  
Isoprene  
Dicyclopentadiene  
Aromatic Tars  
Paratone  
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*Offers an  
extensive line of  
oxygenated solvents  
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The solvents and chemicals sold under the ENJAY\* Oval Trade-Mark are outstanding for high quality and dependability. Every day more industries are calling on the long experience of the Enjay Company . . . making greater use of the diversified line of solvents and chemicals marketed by Enjay to increase product quality.

**REACTION  
OF THE  
MONTH**

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among the most  
powerful reducing  
agents in the  
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## Sodium Borohydride

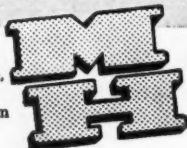
Selective Reductions of Aldehydes,  
Ketones and Acid Halides  
does not effect other reducible groups

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Metal Hydrides Inc. is a pioneer in the production of Hydrides on a commercial scale. These highly reactive, diversified compounds, are now available in powdered or lump form as Hydrides of Lithium Aluminum, Titanium, Zirconium, Tantalum, Sodium, Barium and Calcium.

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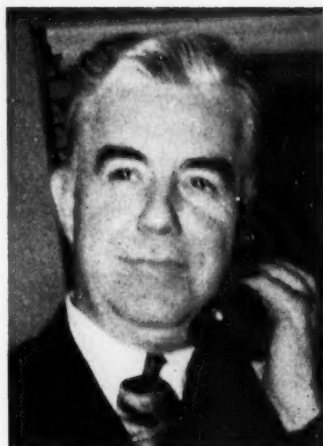
**METAL HYDRIDES INC.**  
12-24 Congress Street  
BEVERLY, MASS.

### RESEARCH . . . . .

moment) has been approved by Petroleum Administration for Defense. It calls for a 50 million pounds a year plant. Location of the new plant will be dictated by accessibility of raw materials and availability of water transportation. Probable choice: Gulf Coast area. Estimated date of completion is somewhere in the first half of 1953.

M-W's synthesized sulfonates may be had as sodium, calcium and possibly other metallic salts of various-molecular-weight products. Molecular weight of the lube oil additive runs to between 575 and 600. A 475-molecular-weight product will also be available.

**Dual Appeal:** M-W isn't relying solely on uniformity to sell its new wares; the company expects its products to have a good deal of technical appeal as well. Here's why: Higher-



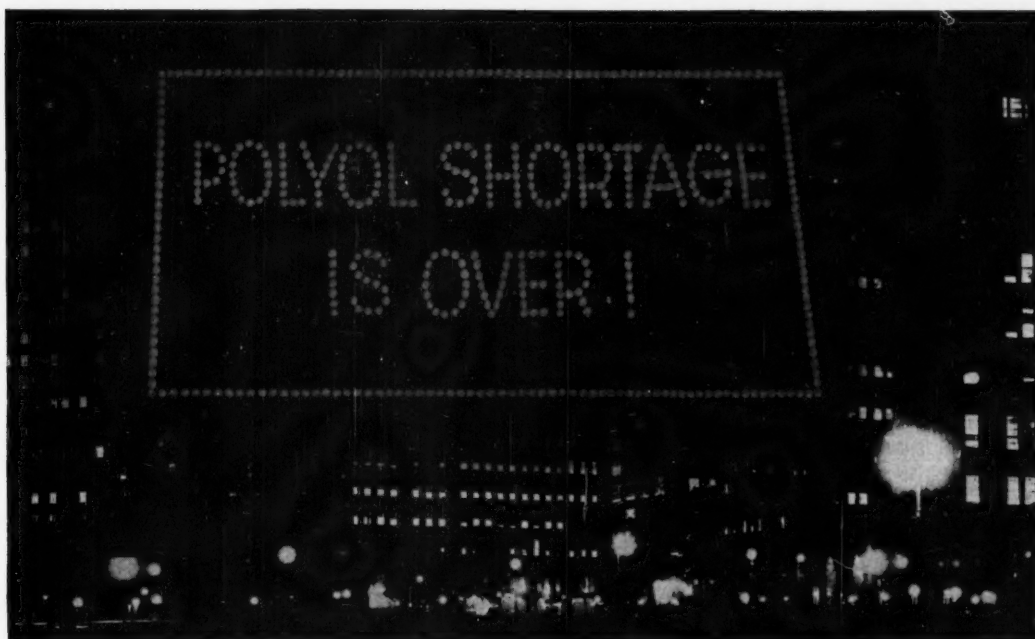
M-W's MORTON: Pioneering steps for tailor-made sulfonates.

molecular-weight compounds, containing more combined SO<sub>3</sub>, should have better lube oil additive qualities than currently available petroleum sulfonates.

Samples have gone out to leading sulfonate consumers and, according to M-W President Joseph R. Morton, have shown up well in engine tests. Interest in the trade has been widespread and apparently gratifying; the first trial tank car shipments started rolling this past month.

Aside from their use as lube oil additives, sulfonates have substantial markets as cutting oil emulsifiers, rust preventives, fat splitting agents and emulsifiers in textile processing oils. Just how the new M-W sulfonates will compete in these jobs remains to be seen. But cost probably won't be an obstacle. Morton says prices will be





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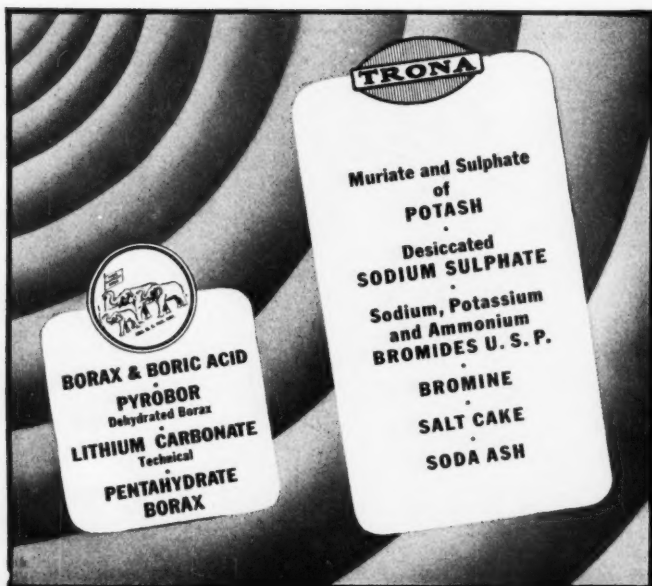
Producers of tobacco products, cosmetics, pharmaceuticals, resins, cellulose films, adhesives and many other products rely on Atlas for their polyol requirements. If you'd like to investigate their use in your industry, write for information.



*Industrial Chemicals Department*

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# 65

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## RESEARCH . . . . .

in line with by-product sulfonates. Although M-W's sulfonates are pouring out of its pilot unit at a good clip, process research continues. President Morton believes the best is yet to come. He says "... indications are that, as our process develops, it is going to make possible the production of a number of things that heretofore have not been available. Currently we do not know of any particular limitations except the ones inherent in the development . . . of a new continuous process where every step is a pioneering one."

## Fireproof Fibers

Think of quartz and you think of crystals, prisms and tubes. You'll be adding fibers soon. Glass Fibers, Inc. (Toledo, O.) is just out with a new fiber which is chemically identical to quartz.

Biggest initial use will be in the form of an electrical insulating paper, but applications in the atomic energy program also may be coming up.

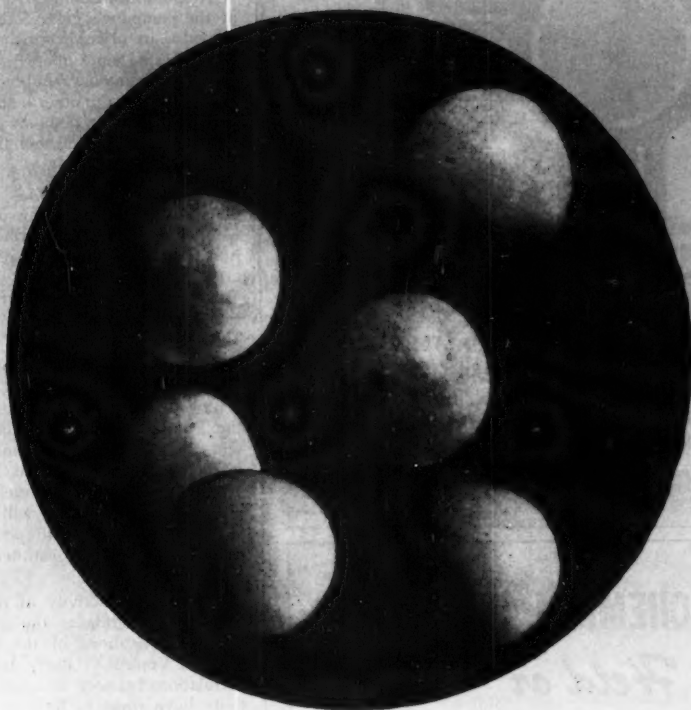


**DOMINICK LABINO:** New laurels for an old hand.

The new quartz paper looks practically made to order for its role as an insulator. It keeps electrical losses to a minimum at high frequencies, is resistant to temperatures up to 3,000 F and is reported to be relatively impervious to nuclear radiation. These properties fit right in with recently disclosed defense requirements for high-grade paper insulation, resistant to temperatures of 1,000 F and up.

Also important is the quartz paper's strategic value as a replacement for asbestos. Glass Fibers points out that the paper has a higher working temperature than asbestos, is magnetite-

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## RESEARCH . . . . .

free and not as susceptible to chemical breakdown.

**Atomic Outlets:** High-temperature wrapping insulation looks like the chief outlet for the new paper. On the horizon are applications in atomic-powered aircraft and warships as well as in atomic weapons of all kinds.

To Dominick Labino, vice president of the company's glass division, goes a good share of credit for the development of the quartz fiber. An old hand at glass technology, Labino has applied his talents to other fields as well; in 1930 he made news by designing and building what was then the world's smallest electric motor.

**New Phosphites:** Four new phosphites—dimethyl hydrogen, trihexyl, triisooctyl and triisopropyl phosphite—are now being piloted by Virginia-Carolina Chemical Corp. at Charleston, S.C.

**Tangible Odors:** Odorous atmospheric contaminants will shortly be characterized by a scheme worked out by the Franklin Institute in cooperation with Philadelphia City Planning Commission. An apparatus has been developed to collect and liquefy atmospheric samples; liquids will be analyzed with an infra-red spectrometer to identify odorous constituents.

**TB Note:** The activity of diploicin<sup>\*</sup> derivatives highlights the antitubercular investigations of the Irish researcher Vincent C. Barry. Interesting correlations between structure and activity have come to light as a result of his work: The most active compounds contain an hydrophilic group (either acidic or basic) para to the oxygen bridge.

Multiple groupings which promote high water-solubility depress biological activity; two amino, guanlyl or hydroxyls have a depressing effect. One or two chlorine substituents boost antitubercular potency; further halogenation contributes little. Compounds which contain halogens on both aromatic nuclei show greatest activity.

**Hydride Analysis:** French researchers report a new quantitative determination of lithium aluminum hydride. The procedure involves the addition of excess standard iodine to an ether solution of the reducing agent and back-titrating with sodium thiosulfate. The iodometric procedure is supposed to be faster and more ac-

<sup>\*</sup> The 2',6'-lactone of 5,6'-dimethyl-2',3'-dihydroxy-4'-methoxy-2, 3', 4,5-tetrachloro-6-carboxydiphenyl ether.





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Illustration of a woman in a supermarket aisle, pushing a shopping cart. The cart contains various products, including a bottle of hand lotion and a box of cream cheese. The background shows shelves stocked with more products. The text 'SUPER MARKET' is written in a stylized, mirrored font at the top. A large speech bubble in the center contains the text 'Super Products from Isco Chemicals'.

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## RESEARCH . . . . .

curate than gasometric methods which are based on the measurement of hydrogen liberated from the hydride by treatment with water.

**Trial Monomer:** N,N'-methylene-bis-acrylamide is available in trial-lot quantities from American Cyanamid Co. It's a new, bifunctional monomer which undergoes both vinyl and amide reactions. Examples: copolymerization with monomers like ethylenesulfonic acid, acrylic acid and chloromaleic acid, yielding cross-linked, insoluble resins; reaction with formaldehyde to form a substance which can be cured to a hard film. Interesting products are also obtained by reacting the new monomer with polyester resins and secondary amines.

Potential outlets are in the manufacture of molding compounds, surface coatings, textile finishes and ion-exchange resins.

**Red Tint:** Indanthrenelb CGF Plv. is the trade-name of a new vat dye developed by the German firm, Cassella Farbwerke, Mainkur, Frankfurt. Red-tinted yellow textile hues are supposed to be easy for the new dye which also boasts good fastness to light. It's recommended for the dyeing of flags, draperies and curtains.

**Here In Force:** Commercial quantities of benzonitrile are now available from Socony-Vacuum Oil Co., Inc.



### Feeding Time

BEN L. McLAIN, Oak Ridge atomic pile operator, puts aluminum-jacketed uranium fuel slugs into a channel opening on the face of a reactor. Picture is one of the first out of this recently declassified area at the national atomic laboratory.

March 1, 1952 • Chemical Week

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Chemical Week • March 1, 1952





MOTH LARVAE: The food supply should diminish.

## The Spring Offensive

Mothproofing is on the upswing with a variety of chemicals, thoroughly lab and consumer tested, doing the job.

"Moths are our best customer," an old maxim of the wool industry, is out; a buyers' market has jarred the trade into realizing that mothproofed goods sell better.

The objective now: Getting the consumer to demand mothproofed woollens, to insist on mothproofing with his dry cleaning.

When a man starts thinking about shucking his heavy overcoat for a lightweight spring model, it's time for the maker of mothproofing compounds to start plugging his product to protect that garment going into storage. That's just what the nation's makers of anti-moth compounds are doing now.

The wool industry is getting behind the campaign, too; discarded is the philosophy that the more the moths eat, the more wool will be sold. In fact, realizing that moth-resistance is a good selling point, the industry is preparing to urge consumers to demand treated woollens. And campaigns are under way among launderers and dry cleaners to encourage the insistence on dry cleaning that includes mothproofing.

The Armed Forces, with quantities of uniforms to consider, is vitally interested in ways to prevent wool damage. Products that the Army's Quartermaster finds effective in its Philadelphia labs are sent on to the USDA, which thoroughly examines them at facilities in Savannah, Ga. The current USDA favorite: DDT.

In cooperation with the QM, USDA has developed the equipment to im-

pregnate cloth with 0.3-0.4% DDT (percentage of wool weight), finds that this will protect rolls of cloth in storage against moths and carpet beetles indefinitely. DDT has shown some loss of killing power against houseflies; no such decreased effectiveness has been noted with moths.

**Stopping the Larvae:** Most wool damage can be traced to the larvae of two insects, the webbing clothes moth and the black carpet beetle (known also as the buffalo moth). These can digest the keratin of animal fibers, cause damage estimated as high as \$500 million per year.

• **Mill:** Most durable of the protective chemicals are the mill-applied types. There are three leading products now, two which might be called colorless sulfonic acid dyes, and one an organofluosilicate.\* The woollens are impregnated (about 2% of the wool dyeing weight) during the hot acid color dyeing process, and withstand to a good extent both dry cleaning and laundering.

\* General Dyestuff's Eulan CN (pentachlorodihydroxy triphenyl methane sodium sulfonate); Geigy's Mitin FF (5-chloro-2(2-(3',4'-dichlorophenylcarbamido))-4-chlorophenoxy)-benzene sulfonic acid); Merck's Amuno (triethanolamine hydrofluosilicic acid).

Eulan CN and Amuno were offered before the war; Geigy's Mitin FF is a more recent development. All three are said to offer protection from five years to the life of the garment. Costs are about 4-6¢ per pound of wool treated.

• **Dry Cleaners:** Several mothproofers can be applied by the dry cleaner. Arsenicals, the earliest used compounds of this sort, have fallen into disfavor because of their toxicity; main ones now are those utilizing DDT (example: Fumol's SS 200), methoxychlor (Emery Industries's Sanitone), and the inorganic silicofluorides (Davidson Chemicals' Dapex).

Cost of treatments like these is low. The processing, effective "until re-cleaned" or "for one season," costs the cleaner no more than 2¢ per garment with the methoxychlor types; about ¾¢ with DDT. One maker of a DDT-based mothproof (Fumol) plans to promote national consumer insistence on dry cleaning—which includes no-additional-cost mothproofing.

• **In the Home:** For home use, aerosols and various types of spray are available. Key chemicals in these are DDT (Boyle-Midway's Moth-Ded) and the silicofluorides (Zonite's Larvex). But business in the field of spray-ons is trifling compared to the old standbys, naphthalene and paradichlorobenzene. Though neither of these can be used to full advantage unless the storage closet or trunk is tightly sealed, at least 25 million pounds of each is sold every year.

Another sort of protectives, which might be home applied, or mill applied, is the reverse-charge dye. An example: 3,4-dichlorobenzyltriphenyl phosphonium chloride, applied with a nonionic detergent. Although testing on this is not yet complete, it seems to withstand dry cleaning, but not soap washings.

**Plenty of Material:** With about 450 million pounds of wool used each year, there is no question that there is a terrific potential for mothproofing compounds.\* The dry cleaner's opportunities are in non-mill-treated clothing. These opportunities are big, too: one treatment, available only since 1946, has been applied to an estimated 100 million garments.

Moth damage isn't confined to clothing—neither is moth protection. The mill-applied wool treatments can be used equally well on fibers headed for rugs, upholstery, or draperies. Cur-

\* Wool market will remain large, in spite of growing synthetic fiber sales. There's no doubt the mothproof qualities of dynel, nylon, and others has helped change the wool industries' attitude toward mothproofing.

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## CHEMICAL WEEK

One of a series of advertisements prepared by THE ASSOCIATED BUSINESS PUBLICATIONS



## SPECIALTIES . . . . .

rently, and curiously, not much is being mill-treated. As a result, a fairly large group of firms offering moth-proofing services have been established.

These professional mothproofers usually guarantee against moth damage for 2-5 years. (Some say the short guarantee is more to yield repeat business than because their process is not durable.) Most service men, working on a building or home, do moth extermination as well as mothproofing. Chlordane is good for extermination; for the anti-moth, the same chemicals used for garments find application.

**Follow Directions:** There are several difficulties facing the makers of anti-moth products, in addition to those presented by the insects. One is making sure the user applies the product as specified; another concerns guarantees.

Application of mothproofers in textile mills requires care. Suppliers of the compounds of this kind generally oversee the mills getting into operation with their products, and maintain a check on the processing once it is well established.

Guarantees are touchy things, too. When Konate, one of the first dry-cleaner-applied compounds (developed by American Cyanamid), was offered to consumers back in 1931, it was accompanied by an insured guarantee for five years' protection. But differentiating between pre-treatment and post-treatment damage was tough, and claim squabbles were one of the major contributing factors to Konate's demise in 1939. Guarantee trouble may have contributed to the current dormancy of the Bocon process, which three years ago seemed to have the moth-proofing market in its pocket.

With professional mothproofing men, whose guarantees depend on their own work, it is a somewhat easier matter. Reweaving or replacement of damaged fabrics is the usual offer.

Makers of anti-moth products have found wide acceptance of their products in Europe, where economics will not permit waste of wool. Producers are now striving to get the American consumer to demand the service insisted upon abroad.

## Soaps Slip

Sales of soap and synthetic detergents in 1951 declined 7.9% from the 1950 levels, according to the Association of American Soap and Glycerine Producers, Inc. The Association, which keeps close tabs on soap sales, reported that on the other hand, liquid soaps and synthetic detergents, climbed about 18% over 1950.

Chemical Week • March 1, 1952

## SPECIALTIES . . . .

Biggest year for soap was 1947, when sales were a good 45% over 1951, on a dollar basis. Synthetic detergents, though, have cut into the business sharply, and where soap sales sagged, synthetics soared.

Roughly 23 million pounds of synthetic detergents were sold in '48; by 1951, 81 million pounds were moved. Liquid synthetic detergents showed an even more startling increase: from 12 thousand pounds in '48 to over 6 million pounds last year.

## Fair Trade Latest

Last week the simultaneous hearings on two bills (McGuire and Keogh bills) to resurrect the fair trade laws neared an end (*CW, Feb. 16*). The Priest subcommittee of House Interstate and Foreign Commerce committee, hearing on the McGuire bill (pushed by the National Association of Retail Druggists), was running out of witnesses, was about ready to write a bill.

If the McGuire bill reaches the House floor, it will make it impractical to continue hearings in the Celler subcommittee, which has witnesses scheduled to March 12. The Keogh bill, backed by the American Fair Trade Council, is the one before Celler's subcommittee of the House Judiciary Committee; the double hearings resulted from a rivalry between the NARD and the AFTC.

Though chances are good that a fair trade bill would pass the House, it would face rough going in the Senate. And a Truman veto is still a threat for any bill that gets through Congress.

## Cold Waves Again

A kind of cycle of lawsuits characterizes the cold permanent wave business now, involving patents granted last December to Sales Affiliates, Inc. (*CW, Jan. 26*). Some licensing goes on, and there's a new, non-thioglycolate process getting warmed up for wide-distribution.

The patents, issued after ten years of litigation, are currently being challenged by Toni Co. and Helene Curtis Industries. On the other hand, Sales Affiliates is suing Toni and Helene Curtis (plus several others including distributors), charging patent infringement.

In the meantime, Sales Affiliates is said to be continuing negotiations with Toni; and from time to time reports that other manufacturers have received licenses to use its process.

In Chicago, Fantastic, Inc. is readying a new cold wave kit for Midwest-



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**FOR CHEMICAL PROCESSES**



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## SPECIALTIES . . . .

ern distribution. It is a very hush-hush proposition, according to the maker, which confesses it doesn't know the exact formulation of its product. One thing sure: Fantastic isn't a sulfite or a thioglycolate process, so will not face trouble with Sales Affiliates' patents.

The kit, trial-priced at \$3, will be featured in ads which emphasize the process's difference from the thioglycolates, say it is the only home permanent OK'd by the Swiss government. Further claims are that it's harmless to the eyes, and can even be safely swallowed.

The process is unpatented. Raw materials for the lotion and developer are shipped in from Italy, and have thus far defied analysis. Cedar Rapids, Ia., and Rockford, Ill., were the initial test areas; more general Midwestern distribution will begin soon, but national selling plans aren't set.

**More Melamine:** The Merrimac Division of Monsanto Chemical Co. has expanded facilities for the production of Resloom HPS, a dry powder melamine resin used for developing permanent embossed effects on cotton fabrics.

**For Baking Enamels:** Uformite F-158 is the latest urea-formaldehyde resin made by Rohm & Haas for use in white enamels such as are used on kitchen appliances. Since the new product is based on propyl alcohol, it is hoped that enamel prices will be lowered and stabilized.

**New Antistatics:** Nul and Carpetreet are the two most recent additions to the Electrochemical Products Corp.'s (East Orange, N.J.) line of anti-static electricity compounds. Nul is for synthetic fibers such as nylon and dynel; it is added to the after-wash rinse water, must be reused after each washing. Six-oz. bottles of Nul will be sold at 50¢ through general retail outlets.

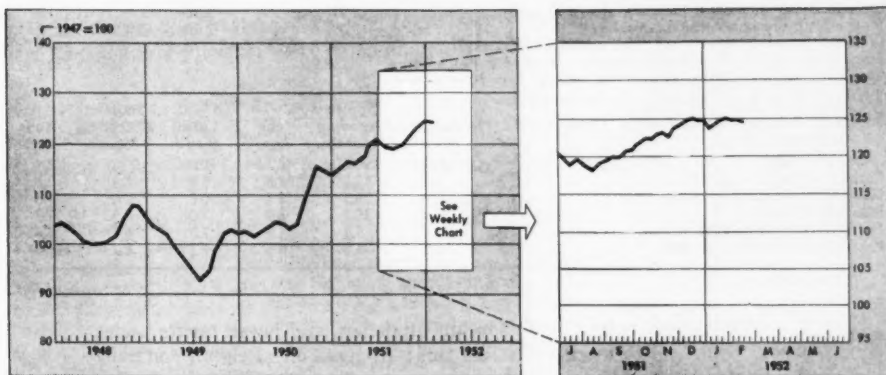
Carpetreet, for rugs and carpets of wool and synthetic fibers, is applied in liquid form by means of a vacuum cleaner spray. It will be marketed through janitorial and hardware wholesalers in quart bottles, one- and five-gallon cans.

### PICTURES IN THIS ISSUE:

p. 11 — Topie Studio; p. 14 — Dow Chemical Co.; pp. 15 & 37—Wide World photos; p. 39—Wool Bureau Inc.; p. 48 (2)—Hill & Knowlton, Inc.



# MARKETS . . . . .



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries

## MARKET LETTER

More chemical output means a shrinking list of chemicals staying on allocations. Two cases cropped up this week to point this up—one from industry and the other by Government action.

Supplies of titanium dioxide are now practically unrestricted for the first time since 1943. One major producer has now cut out voluntary allocations for both high- and low-titanium bases.

Government controls on polytetrafluorethylene (Teflon) were chucked this week by revocation of Sched. 2 under NPA chemical order M-45. Teflon—highly prized for its inertness—has been under use curbs since April 6, 1951. Easing reasons: 1) bigger output 2) broader military use for similar, partly-chlorinated types (e.g. Kel-F).

The paint industry is on the receiving end of double-barrelled attention in Washington from both the NPA and the Office of Price Stabilization. NPA told the industry advisory committee what's in the cards, some of it good and some not. On the bright side: ample supplies of pigments including those of lead and zinc, enough tung oil for most purposes.

Less favorable prospects are seen for copper chemicals (marine paints), deep maroon selenium pigments, phthalic anhydride, and castor oil. Meanwhile the quest for suitable substitutes and revised specs goes on.

Some of the bleaker supply news was tempered by the added pricing options that OPS proffered. Under the new alternatives, a paint manufacturer may stand pat on the price freeze schedule (GCPR) or switch to CPR-22.

If he chooses the latter, he then has two more choices: either to work with the Capehart amendment, or to take a flat 15% increase over the base period from April 1-June 24, 1950.

Despite the maze of Government controls, and the wide swings of customer demand last year, the paint industry had the best sales ever. The National Paint, Varnish and Lacquer Assn. has just summed up operations for 1951, finds a rise of 5% over the year before to a sales volume of \$1.2 billion.

## MARKET LETTER

### WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
Chemical Industries Output Index (1947=100)	124.5	124.6	116.0
Bituminous coal production (daily average, 1000 tons)	1,740.0	1,764.0	1,781.0
Steel ingot production (thousand tons)	2,096.0	2,090.0	1,995.0
Wholesale prices—chemicals and allied products (1926=100)	132.6 (Est.)	132.7	147.4
Stock price index of 14 chemical companies (Standard & Poor's Corp.)	228.0	235.7	223.7
Chemical process industries construction awards (Eng. News-Record)			

### MONTHLY INDICATORS—Foreign Trade (Million Dollars)

	Latest Month	Exports Preceding Month	Year Ago	Latest Month	Imports Preceding Month	Year Ago
Chemicals, total	88.8	90.1	66.5	18.8	20.5	23.4
Coal tar products	6.9	7.8	5.8	3.0	6.8	2.8
Medicinals and pharmaceuticals	25.4	24.5	19.1	0.6	0.6	1.6
Industrial chemicals	15.4	15.2	8.9	7.0	5.3	11.3
Fertilizer and fertilizer materials	5.0	5.8	3.9	7.0	6.7	6.8
Vegetable oils and fats, inedible	9.1	8.6	9.5	9.3	8.7	11.0

Increased output from foreign producers and lower tariffs under Torquay will lead to more news like this: At least one Belgian company is now actively checking the Chicago area as a likely spot to bring in and distribute European urea.

Chances are you are among the 2,500 or so sulfuric acid customers and want your allotted share under NPA order M-94. In that case, to get each month's quota, you must file the monthly forms covering Inventory and Receipts (NPAF-160) and—end-uses (NPAF-161). Next deadline: March 20.

Suppliers must be furnished with a certified statement of your acid plans. If these forms have not yet been received, they can be had with least delay from the nearest Dept. of Commerce NPA regional office.

From this week on, RFC will let the rubber industry buy its own imported natural rubber. Reasons the agency bowed out: adequate government stockpile, bumper synthetic output, natural price tumble, protests from the industry.

But tin is still a nettlesome problem for RFC to handle. Producers in the East Indies and Bolivia are balking at RFC's offer of \$1.12 a pound, would like to see the ante raised. Some compromise is likely soon, because the U.S. has few other prospects to step up needed supplies, while the tin suppliers need U.S. business.

Plastic coatings and all-plastic sheeting still have plenty of growth momentum. Record for 1951: Plastic-coated fabrics sales gained 10% over 1950, and plastic sheeting climbed 15%. Almost half of the total output now goes into furniture covering, another 20% into automotive and transportation upholstery.

Quite a few manufacturers will profit from the latest OPS ruling on coproduct pricing under Amend. 5 to SR-7. The new ruling is similar in most respects to earlier provisions: Producers can raise one coproduct ceiling only by lowering another. The difference: Pricing now follows Capehart instead of the original CPR-22, allows higher ceilings.

### SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending February 25, 1952

UP		Change	New Price			Change	New Price
		\$	\$			\$	\$
Oiticica Oil, Liquid, tank cars		.005	.27				
DOWN							
Aminophylline, USP		.75	4.85	Shellac, No. 1 Yellow		.02	.45
P-Aminobenzoic Acid, USP		.90	4.00	Theophylline, USP		.75	5.00

All prices per pound unless quantity is stated

## Firmer for Two Acetates

Cellulose acetate business—in both textiles and plastics—is due to become more active. One inducement: drop in rayon price.

Acetic acid and anhydride demand has been bolstered by newer, faster-growing uses, hasn't eased much until lately.

Pickup in rayon or acetate plastics, combined with other calls, will squeeze acid supplies tight again.

When it comes to answering the question "How's business?", the textile industry has a code language all its own. If the textile men say that business is terrific, they mean it's half-shot. But lately they have been bypassing the code, and just say bluntly, "It's lousy." The trade has of course had a lot of time to make an accurate appraisal—volume of business has been way down since early last summer.

At that time, people who, since Korea, had been stocking up like mad on any and all textile materials, suddenly decided they had enough for a long siege or that the hazards of a possible global conflict were some distance away. This change of buying heart left converters and processors with bulging shelves; and ever since, the industry has been trying to work inventories down to a reasonable level by inducing the consumer to start buying again.

Now, with the coming of spring, the industry can normally count on a seasonal upturn, and with inventories deflated to more reasonable levels, a bigger sales volume is not only hoped for but likely. However, the rise so far is not making the headway that sellers would like to become re-acustomed to. The still-lukewarm buying attitude is prevalent in almost all the fibers, both natural and synthetic. To give business a rousing send-off for the new season, some price concessions can be expected. This week, for instance, cost of cellulose acetate rayon was pruned by 8¢ a pound and is now at a 42¢ mark, just about the same as the usually lower cost viscose rayon.

**Plastic Joust:** Spurred by this price stimulus, a revival in rayon textiles will raise the pressure on supplies of acetic anhydride, and its side-kick, acetic acid. Both of these items have turned softer in the last two months from a stringent position all last year. Reason: easing in cellulose acetate, not only for fabrics but in plastics also.

The plastics business has been below par for some time, though not to the same extent as textiles. Plastics fell off last summer, picked up in the

fall, are more or less marking time now for more business this spring. Stocks have been moving, and sales managers are beginning to note stirrings of life among their customers. Cellulose acetate plastic makers expect to profit by this rekindled interest, and hope that supplies of acetic anhydride won't be the bottleneck in their plans.

But though acetate plastic should improve in the next few months, it is not likely to regain the same position among the plastics that it held a few years ago. Reason: more abundant supplies of cheaper plastics such as polystyrene, which sells for about 10¢ a pound less than acetate. For the latter's prized transparency for sheeting and packaging, plus its resistance to impact, should find a growing—though not booming—market.

**Acid Strength:** At first glance, it's a puzzler how acetic anhydride and the acid have maintained such a strong selling position, when the two top demands have been mostly polite requests. For only since the start of this year, has the spot buyer been able to get supply satisfaction without nail-biting delays.

The reason the acid makers have been doing so well is that a lot of other applications have been coming to the fore fast. Vinyl acetate plastics have gained ground; some herbicides like 2,4 D and 2,4,5 T have yet to hit full stride; and many fast-stepping pharmaceuticals have become big business, which count on larger supplies of both acid and anhydride.

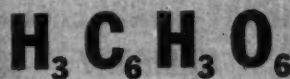
### Milky Way

Further price reductions may be in the offing for casein, which continues to stay in oversupply.

Casein prices are low even now in comparison with the price which can be obtained for other milk derivatives, making it almost a certainty that domestic producers will turn to making almost any other milk product instead.

Imports of Argentine casein have also been high, and the Argentine government has dropped its floor on prices, allowing further reduction in these quotations without government objection.

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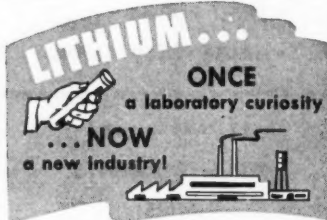
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## MARKETS . . . . .

Add to this greater supply the increasing competition—from synthetic resins which have pre-empted more and more of the adhesives market. Glidden's soybean-meal-based alpha protein is a good bet to nip further into casein sales, so casein prospects are not too cheering.

**None of the Cream:** Among milk producers, manufacture of casein—an end use for milk—is “just one step from the sewer.” The Government, through its price support program, sets a floor on prices for powdered milk, so naturally, less and less milk is ending up as casein.

The U.S. Department of Agriculture has estimated that domestic casein production will probably amount to only 10 million pounds this year, compared to previous 17-22 million pound yearly figures. Present domestic prices range around 33¢ per pound (10,000 lb. lots, fob.). A year ago it was about 10¢ higher.

**Foreign Finagle:** Prices on imported material have also tumbled. The current figure—around 28¢ in 10,000 lb. lots, docks—is down from a 40¢ quotation at the beginning of 1951. Like so many other import commodities, casein was a cynosure for buyers' eyes in the hectic first months of the

Korean war.

Prices had gone up, encouraging new production both in Argentina and in Europe. When over-stocked users, seeing no shortage in supplies, had to work off their inventories, prices dropped.

One reason, of course, for the differential between domestic and imported casein is the differences in cost of production. Another equally important one concerns quality. One industry man probably understated the point when he said, “Foreign casein is not always of uniform quality.”

Further processing of foreign material in the U.S. of course adds to cost, but despite an almost weekly price-parity by Argentine suppliers, buyers still aren't interested.

**Size of It:** While the fields in which casein finds uses — adhesives, paper coatings, water paints, sizes—are generally growing, casein's share of the market has dwindled. Synthetic resins, often available at a lower price and more uniform in quantity and quality, are making inroads.

In 1949, a total of about 70 million pounds of casein was consumed in this country. The figure for last year was about 55 million, and could well be even less in the future.

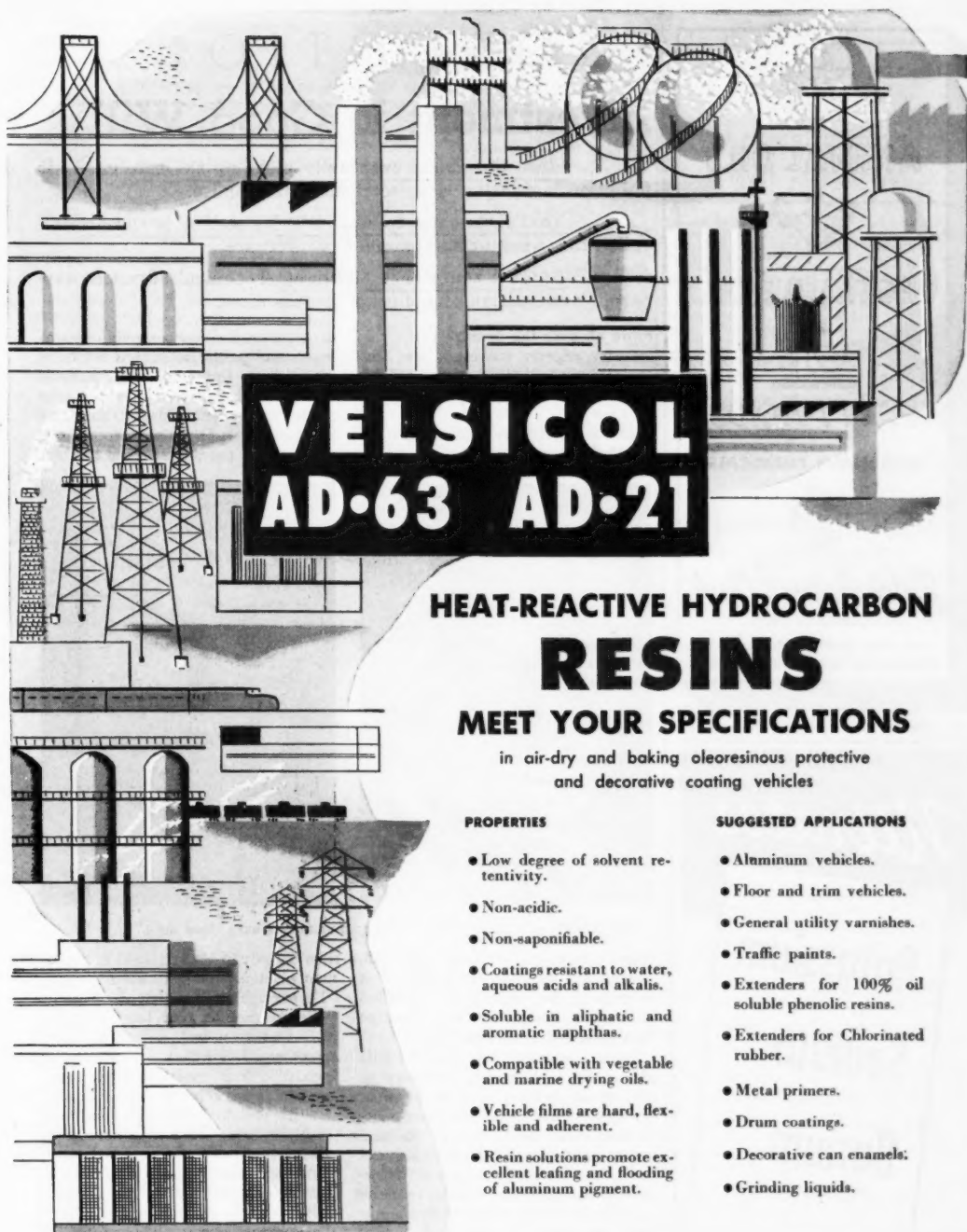
## Government Needs

Bid Closing	Invitation No.	Quantity	Item
Navy Purchasing Office, 111 East 16th Street, New York, N. Y.			
Mar. 14	391-B	20000 lb	Sodium cyanide
Mutual Security Agency, Philippine Council for United States Aid, Fifth Floor, Finance Building, Manila, P. I.			
Mar. 7			Chemical drugs and serums/see MSA/SBC No. 58/1 Social insurance institute for import supply 22 B Churchill Street, Athens, Greece.
General Services Administration, Seattle, Washington			
Mar. 4	F-4907-1	Medium quantities	Misc. chemicals, 5 item
Procurement Division, Supply Service, Veterans Administration, Washington 25, D. C.			
Mar. 4	A-95	5952 btl	Glycerine suppositories
General Services Administration, 1114 Commerce Street, Dallas, Texas.			
Mar. 6	FW-21487	2740 gal	Wax, floor, water emulsion
Procurement Division, Supply Service, Veterans Administration, Washington 25, D. C.			
Mar. 7	A-96	4224 btl 3960 btl 7020 btl 3240 btl 4512 btl 1056 btl 800 btl 420 btl	Xylene Carbon tetrachloride Formaldehyde solution Formaldehyde solution neutral Ammonia solution CMA strong Ammonia water stronger Cresol solution Acetic acid

## Government Awards

Item	Amount	Dollar Value	Supplier	Location
Aviation Supply Office, 700 Robbins Avenue,			Philadelphia 11, Pennsylvania.	
Pigment, copper	648000 lb	212,980	Metals Disintegrating Co.	Elizabeth, N.J.
Boiler compound	270000 lb	28,863	Spazier Soap & Chem Co.	Santa Monica, Calif.
" "	240000 lb	25,380	Cole Labs., Inc.	Long Island, N.Y.
Thinner	57420 gal	43,952	A. H. Thompson Co.	Berkeley, Calif.
" "	37730 gal	29,158	Coast Point & Lacquer Co., Inc.	Houston, Texas
Pigment, zinc oxide	540000 lb	99,414	New Jersey Zinc Sales Co.	New York, N.Y.
Charleston Naval Shipyard, Naval Base, S. C.				
Yosemite compound	21942 gal	32,106	Yosemite Chemical Co.	San Francisco, Calif.





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# PRODUCTION . . .

## Investment in Good Will

Since the public eventually picks up the tab, good air pollution legislation is an economic compromise.

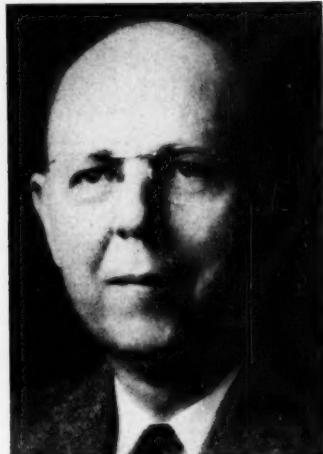
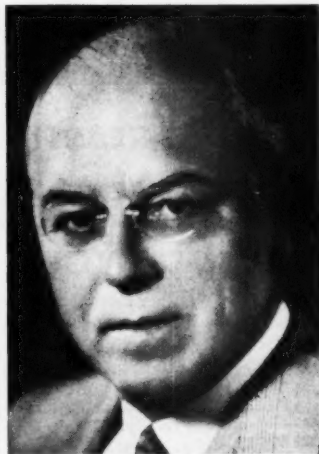
That's the key to M.C.A.'s legislative proposals unveiled this week at its abatement conference.

Another conference highlight: Technical advances now permit anticipation of pollution trouble spots.

From all over the country this week, industry experts converged on New York City to attend the M.C.A.'s seventh conference on air pollution abatement.

In the Hotel Statler's Penntop room—a plush setting for pollution—M.C.A.

of a connection between air contaminants and public health has not been established. But nobody will deny that air pollution can be a nuisance of the first order. And that, plus isolated incidents that are distorted out of their true perspective (like the Do-



MUNSON, GILLET, BEST: Any community can have clean air . . . . .

board chairman, Charles Munson, opened the meeting, then turned it over to J. M. Gillet's air pollution abatement committee and George Best's legislative subcommittee.

Here is how M.C.A. sees the role played by the chemical industry in cutting down air pollution: In areas where extensive tests have been made to determine the source of contaminants, the chemical industry has not been found a capital offender. However, it has taken the lead in research and development of preventive methods. As proof of this, M.C.A. can point to 30 companies that have spent in aggregate an average of \$5 million yearly on capital investment and operating expenditures for pollution control devices.

**Ought to be a Law:** There is no basis for the fear that health is endangered by air pollution; for, in spite of many efforts, concrete proof

nora tragedy in 1948), results in a common reaction among troubled people: "There ought to be a law . . ."

Before passing new laws, suggests M.C.A., take a look at present ones; sometimes full utilization of existing legislation is all that it needed. Then, if a new law is actually required, build one that will do its job most effectively—without being unfair or unnecessarily restrictive.

An important point to remember in this connection is that the public—either with or without realizing it—is the one that eventually picks up the tab for industry's abatement measures. Any community can have clean air; the question is purely an economic one. Necessary compromises could be more easily reached if that were kept in mind.

As the framework for a realistic, workable law, M.C.A. suggests one that has the following characteristics:

"Pollution of the atmosphere to the detriment of health or property shall be unlawful. This should not be construed as contrary to the reasonable or natural use of air for dispersing waste products within the proper capacity to do so. Each area affected by the same source of pollution shall be considered unique and the area judged on the basis of its specific effects. The requirements for pollution reduction and control shall remain within the bounds of scientific knowledge and economic feasibility. Responsibility for the proper control emissions shall lie with the potential offender. Where community livelihood would be adversely affected by drastic reduction of air pollution, the right of local option is to be exercised in determining the extent to which reduction of pollution shall be required."

Seven Steps: More specifically, M.-



..... at a cost.

C.A. suggests the law should embody seven principles:

- Creation of a state bureau. Although air pollution is strictly a local problem the cost of physical facilities for dealing with it would be prohibitive for many small communities.

- Establishment of localized air pollution zones. The local area should be one affected by emissions from essentially the same source. A zone should be set up only after a study shows pollution to be excessive and where residents think the problem needs attention.

- Local control commissions. The local commission would be made up of seven members representing the interested parties. Industry would have two members on the commission; one, an executive, the other, technical.

- Registration of points of emission. Registration data should include location, size and height of outlet, rate

and composition of effluent. New installations should be registered as soon as design is complete. The state bureau could issue warning if it thought excessive pollution would result from the new installation and the warning would serve as a deterrent to building unless the potential offender were convinced that no harmful effect would result. The state bureau would not be empowered to take action until harmful effect is established.

- Right of entry. Personnel of both the state bureau and local commission would have the right to enter public or private property within reasonable limitations.

- Action by the state bureau. When a cause and effect relationship has been proved between a certain emission and a harmful effect, the state bureau would recommend the emission be reduced to an indicated level. But action by the state bureau could be invalidated by a majority vote of the local commission if it thought it worked an economic hardship on the community.

- Cooperation in technical advancement. Since technical advances are vital to the solution of the problem, the state bureau would investigate control and effects of air pollution and assist in solving technical problems within the state; consult and cooperate with other groups within the state; assemble and distribute information; and represent the state in interstate problems.

**Pound of Cure:** After M.C.A. unveiled its legislative proposals, the conference turned to other aspects of the pollution problem. One point brought out was that, until recently, industry's efforts centered on means of cutting down existing pollution. But now, advances in technology permit the design engineer to anticipate trouble spots, take steps to avoid them.

The key to a successful preventive (rather than curative) program is management recognition and willingness to undertake such a policy. As outlined by Du Pont's C.A. Gosline, the plan would then consist of six or seven steps. First, data are collected on the process conditions and waste characteristics during the research and pilot stages. If alternate sites are under consideration, potential problems for each should be measured after a visit to the sites. After the site has been selected, measurements are made, at the site, to define dispersion coefficients, measure the persistence of stagnant air and to survey vegetation.

Next, a waste disposal flow sheet is drawn up. After the factors are studied for each step of the process, and for each building and piece of

## How to select construction materials which resist chemical corrosion most effectively

Chemists and engineers concerned with the production of foodstuffs, pulp and paper, synthetic resins, and many other chemical products will find this book a valuable guide to selecting construction materials which resist chemical corrosion most efficiently. Considering materials as they have been proved most serviceable and economical by practical operating experience, rather than by laboratory tests, this book shows you what construction material does the best job of combating the corrosive effects of over 300 specific chemical products.



## Materials of Construction for CHEMICAL PROCESS INDUSTRIES

By JAMES A. LEE

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468 pages, 111 illustrations, \$6.50

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## PRODUCTION . . . . .

equipment, plans are made to avoid excessive pollution during start-up. That's important, since it's easy to create an impression during that time that pollution from the plant is always excessive. Finally, a survey during the operating phase will confirm design data and provide the basis for further work if it is necessary.

**Selling, Too:** In general the tone of the talks and conversation at the conference was encouraging. Big strides been made in pollution technology. But just as communities can't legislate themselves into clean air, industry can't solve the pollution problem on its own hook. What is needed is co-operation and teamwork by both sides; and one of the big jobs facing industry is selling the public on the idea that industry is totting its share of the load.

### Captive Oxygen

Joy Manufacturing Co. (Pittsburgh) has introduced a semi-portable machine for generating high-purity oxygen. It gives promise of sizable savings for chemical companies that consume from a half to twelve tons of oxygen a day.

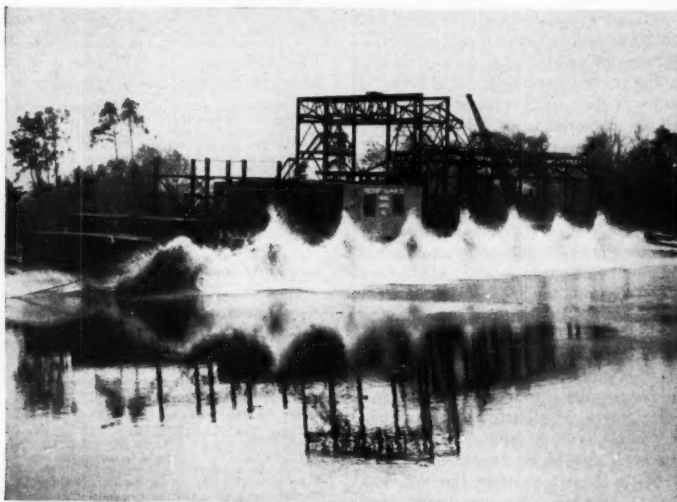
Currently, Joy is marketing only one model (two tons daily) but eventually it expects to offer a line of four units to generate a half, two, six and twelve tons daily. Initial cost of the machine will depend on accessories, but will range from \$20,000-\$30,000

for the half-ton unit to \$150,000-\$175,000 for the big one.

Joy figures that operating costs for the two-ton unit will be somewhere between 5¢ and 10¢ per 100 cu. ft. Since the cost of purchased oxygen varies with the size of the order and the length of the haul from manufacturer to customer, oxygen producers do not publish price lists. However, Joy has surveyed 50 prospective customers, estimates present oxygen purchasers are paying at least 65¢ per 100 cu. ft. for a take as low as 150,000 cu. ft. a month to 25¢ per 100 cu. ft. for a take of 30 million cu. ft. monthly.

**Flexibility?** Joy figures the potential market for its machines at \$50-\$100 million and it may make inroads on the oxygen business of the big producers—Linde, Air Reduction, and National Cylinder Gas. But the chances are there is room for all. For one thing, the oxygen user can get more flexibility of supply with purchased oxygen. He can also be assured of a steady supply, whereas the Joy units may require down-time occasionally as the best machines do. Then, too, oxygen producers offer technical service.

And probably most important for the immediate future, present oxygen consumers are tied to long-term contracts. That doesn't bother Joy too much, however, since it is not ready for full-scale production, expects some trouble getting necessary materials.



### Barge Mining for Sulfur

THE FIRST MARINE MINING PROJECT for the sulfur industry will get underway when Freeport Sulphur moves this 200 ft. barge to marshlands at Bay Ste. Elaine (La.). Instead of fresh water, Freeport engineers will use salt water for mining the sulfur. They have developed a method for removing oxygen, hope it will cut down on the corrosion problem usually associated with salt water. When mining equipment has been installed on the barge, it will be towed 65 mi. to Bay Ste. Elaine, where it will be partly submerged on a prepared bottom.

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Autoclaves, Tite Lined. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Calenders, New Rubber Calenders, 6x12", Johnson joints, 7½ HP motor, Complete. Eagle Industries, 110 Washington St., NYC.

Centrifugals, Bird Rubber Covered. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Centrifuge, Fletcher 20" Stainless Perforated Basket. R. Gelb & Sons, Inc., Union, N.J.

Condensers, Coil, St. St., 40 sq. ft. Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

Dryer, Buffalo Vacuum 20 shelf; 40"x44". First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Dryer, Vacuum shelf, Devine, double door, 17 shelves, pump, condenser, 3. Consolidated Products, 18 Park Row, N.Y. 38. BArcley 7-0600.

Dryer, Vacuum Shelf Devine, 9 shelves. R. Gelb & Sons, Inc., Union, N.J.

Dryer, Vacuum Shelf, 44"x44" shelves, MD pumps, complete, Eagle Industries, 110 Washington St., NYC.

Dryers (4 Bealrd 4"x27" gas-fired with blowers). Chemical & Process Machinery Corp., 146 Grand Street, New York 13, N.Y.

Dryers, Stainless Drum 5"x10". First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

Evaporator, Stokes, 625 gal. 5/5 304 fkted & coiled. Chemical & Process Machinery Corp., 146 Grand Street, New York 13, N.Y.

Evaporators, Multiple Effect. First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.



**For Sale**

**Filter, Sparkler Monel Jack.** #33526. R. Gelb & Sons, Inc., Union, N.J.

**Filter, Sweetland #5, 29 leaves.** Perry Equip. 1415 N. 6th St., Phila. 22, Pa.

**Filters, Sweetland, up to #12.** First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

**Filter, 3"x2" Oliver Steel Rotary Vacuum.** Equipment Clearing House, 289 10 St., Bklyn. 15.

**Filter, 8"x12", Feline all 5/5 Rotary Vacuum.** Consolidated Prods., 18 Park Row, N.Y. 38.

**Filter Press, 30"x30", aluminum, 45 chambers.** Consolidated Products, 18 Park Row, N.Y. 38.

**Filter Press, 30"x30", iron, Shriver and Johnson.** 35-40 chambers, 6 Consolidated Products, 18 Park Row, N. Y. 38 Barclay 7-0600.

**Filter Presses, all sizes and types.** Process Industries, 305 Powell St., Brooklyn 12, N.Y.

**Mill, Ball Hardinge 4 1/2"x2".** Perry Equipment Co., 1415 N. 6th St., Phila. 22, Pa.

**Mill, New Rubber Mills, 6x12, 6x14, 6x16.** Johnson joints, Complete. Eagle Industries, 110 Washington St., N.Y.C.

**Mill tube Hardinge 4'x14'6"** Belgian block lined. Chemical & Process Machinery Corp., 146 Grand Street, New York 13, N.Y.

**Mixer, Lab 8P Vacuum, 17 gal. jktd, MD.** Complete. Eagle Industries, 110 Washington St., N.Y.

**Mixer, 7000#, Dry Powder, horiz. Jack.** 12"x3' x5', spiral agitator. Consolidated Products, 18 Park Row, N.Y. 38. Barclay 7-0600.

**Mixers, AMF, Glen, 340 qt. & 120 qt., 5/5 bowls** & beaters, AC motors, 4. Consolidated Products, 18 Park Row, N.Y. 38. Barclay 7-0600.

**Pebble Mills; 8"x8", Porcelain lined.** First Machinery Corp., 157 Hudson St., N.Y. 13, N.Y.

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**Tablet Press, Stokes R, single punch.** Consolidated Products, 18 Park Row, N.Y. 38.

**Tank, 5700 gal., 5/5, Horiz., New.** Perry Equip., 1415 N. 6th St., Phila. 22, Pa.

**Tank, New 20,000 Gal. Cap. 5/16 Steel & avail-** able. L. M. Stanhope, Rosemont, Pa.

**Tanks, 2 10,000 gal. SS Storage Tanks, practi-** cally new. Eagle Industries, 110 Washington, NY.

**Tank, 5/5, 3,000 gal. for truck.** Perry Equip- ment, 1415 N. 6th St., Phila. 22, Pa.

**Tanks, SS, from 180-3500 gal. jktd., storage,** agitated. Eagle Industries, 110 Washington, N.Y.

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# BOOKLETS

## Chemicals

### Rustproof Agent

4-p. bulletin describing "Rustshield 2," a phosphatizing compound used to produce an oil-retaining rustproof surface for moving metal parts, explains advantages of compound, surface preparation, application methods, and typical industrial uses. Octagon Process, Inc., 15 Bank St., Staten Island, N.Y.

## Equipment

### Oscillating Conveyors

24-p. booklet giving dimension, weight, capacity and horsepower data on its line of positive action oscillating conveyors for conveying, feeding, cooling, and screening various loose bulk materials; additional information is included on typical materials handled, typical uses, construction, and selection details. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

### Grinding Mills

44-p. technical bulletin containing engineering data on six different types of grinding mills with reference to their basic design, parts, specifications, dimensions, and capacities; also included are equations and tables, presented as a guide in mill selection, and closed and open circuit grindability indexes. The grinding mills are used in the rock prod-

ucts, cement, chemical and mining industries. Allis-Chalmers Mfg. Co., Milwaukee, Wisc.

### Carbon and Graphite Brick

Catalog section noting the principal features of carbon, graphite and impervious graphite, along with their typical metallurgical, processing and chemical applications. Tables give information on brick sizes, shapes, grades and physical properties. National Carbon Co., 30 E. 42nd St., New York, N. Y.

### X-Ray Diffraction

8-p. booklet discussing X-ray diffraction, a non-destructive analysis method utilized in identifying components or raw materials to assure uniformity in identifying unknown materials, constituents of mixtures and impurities. Also indicated here are uses for this analytical tool in the selection of raw materials, analysis and control, and in the tracing of physical and chemical changes during technological processes. North American Phillips Co., Inc.

### Electronic Scanning System

4-p. data sheet detailing the applications, operation and other data for electronic scanning system designed for automatically measuring up to 270 temperature points. The component units of recorder, control and rectifier are explained and illustrated. Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.

### Thermocouple Gland

4-p. bulletin describing bare wire thermocouple glands, which use talc as a sealant, intended to provide more accurate temperature measurements of gases, vapors, or liquids. Conax Corp., 4515 Main St., New York, N. Y.

### Vertical Pumps

8-p. booklet illustrating and describing various arrangements and types of construction commonly used with vertical pumps; noted are dry sump pumps, dual discharge pumps, propeller pumps and vertical submerged pumps. Lawrence Machine and Pump Corp., 371 Market St., Lawrence, Mass.

## General

### Low-Temperature Research

4-p. publication presenting news notes of current activities in low-temperature and electromagnetic research, including items on new techniques, laboratory notes, and conference news. Arthur D. Little, Inc., Cambridge, Mass.

### Petroleum Processing Company

16-p. brochure entitled, "Meet the Lummus Company" introduces firm's new office in Houston, Tex., and goes on to picture other branch offices, affiliates, and facilities, while the text outlines scope of work performed by each. The Lummus Co., 385 Madison Ave., New York, N.Y.

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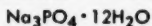


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## Trisodium Phosphate



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